THE VETERINARY RECORD

A Weekly Journal for the Profession.

No. 1018. JANUARY 11, 1908. VOL. XX

THE DISEASES OF ANIMALS, 1907.

The summary of returns under the Diseases of Animals Acts which we published last week completes the account for a year—52 weeks—and we are able to compare the figures with those of the previous year.

There are only four diseases prevalent: Anthrax, Glanders, Sheep-scab, and Swine-fever. Rabies was stamped out in 1902, and the last isolated outbreak of Foot-and-Mouth Disease was successfully dealt with in the same year.

The returns of Anthrax show a slight increase, 1089 outbreaks in 1907 against 939 in 1906; whether the increase is due to a spread of the disease or to better diagnosis is a moot point. It is curious how occasional cases of anthrax in horses are found in London—perhaps one solitary case among 40 other horses, and then no more. The food is always suspected but rarely is the infection positively traced.

The returns of glanders show a decrease as:—

1907	Outbreaks	850	Animals attacked	1934
1906	,,	1066	,,	2012
1905	,,	1214	,,	2068
1904	,,	1507	,,	2628

Comparing the outbreaks with the number of horses attacked it will be noticed that last year shows over 2 horses to each outbreak, and that other years show less in proportion. The probable explanation is that mallein is employed in many outbreaks with the result of increasing the number of diseased animals detected.

In London mallein has been largely used, and a large number of the cases destroyed have lately been mallein reactors. This must have removed many centres before infection was spread, and the results will appear later in a reduction of the disease. The new Order which came into force on Jan. 1st will stamp out glanders in due time

Sheep-scab shows an increased number of outbreaks—751 for 1907, and 534 for 1906. We should fancy all the extra might be accounted for by better notification.

Swine-fever shows a marked increase in 1907 over 1906, as that year did over the previous one. There is certainly something wrong about the regulations. It must also be confessed that owners do not co-operate with the Board. Prosecutions have shown over and over again how un-notified outbreaks of disease have been carried to distant parts or spread disease over a whole neighbourhood. Penalties are not to be dispensed with, but they should be balanced by inducements. Without the co-operation of the owners no disease has been stamped out.

AS TO DIAGNOSTIC SYMPTOMS OF ANTHRAX IN HORSES.

I was very much interested in Prof. Penberthy's able discussion of anthrax in the paper he presented some short time ago before the Farmers' Club, as this fatal malady is quite prevalent in the alluvial sections of Louisiana and other States bordering upon the Mexican Gulf. In fact, in many places the infection may be said to be, more or less, permanent. This condition has, doubtless, been brought about by the careless disposition of anthrax cadavers in the past, and the want of effective live stock sanitary legislation, combined with the lack of accurate information on the part of the people generally, regarding the true nature of the disease—a state of affairs which, happily, is being gradually changed for the better.

In referring to the disease in horses, Prof. Penberthy remarks that: "Horses are affected In various ways, but there are no diagnostic symptoms," I realise that Prof. Penberthy's audience was, no doubt, chiefly composed of agriculturists and those interested, more or less, in the success of British Agriculture, and that he had in mind at the time the most common form of anthrax occurring in Great Britain, viz,, the acute intestinal form, which has such a rapidly-fatal course as to obscure any symptoms of a diagnostic character. But, as the Professor's admirable paper has reached further than the limits of the "tight little island," through the medium of the veterinary and agricultural press, and has, no doubt, been read in other parts of the world where other conditions exist, it has occurred to the writer that the statement quoted may possibly be a little misleading if applied to the disease in all its forms.

In the Lower Mississippi Valley, of which Louisiana (and some of the contiguous States) forms a part, for example, the much greater number of cases result from external inoculation, and hence exhibit the diagnostic carbuncular manifestations. And the most potent factor in the transmission of the infection is different species of *tabanids*, or horse flies, which are common to the section of the country. In fact, up to a few years ago, and even to-day, many of our people looked upon anthrax as a "swelling," and if no swelling happened to be present they did not attribute their animal fatalities to this disease, or *charbon* as our French population term it. Also, they attributed the occurrence of the disease to a fly, which they termed the "charbon fly," without, however, realising that anthrax was of bacterial origin, or that the fly was merely the transmitter of the virus

In the alluvial sections of this and neighbouring States, and in the marsh lands of the coast of the Gulf of Mexico, there are, during favourable seasons, a great abundance of tabanids of different species. In fact, in some years these horse flies reach almost to the plague point. A first case of anthrax is usually some animal, or animals (cattle generally), that has succumbed to the intestinal form while grazing over pasture land that had previously been infected from anthrax carcases that had been allowed to remain upon the surface of the ground unburied or uncremated. Should a season be fruitful of large numbers of these flies, and with the blood of a few anthrax victims to feed upon, either immediately previous to or immediately after death, we are almost certain to have the infection scattered, through the medium of the infected flies, over wide areas, and resulting in large numbers of cases of carbuncular anthrax, in mules and horses especially. I place mules first, because in Louisiana they greatly outnumber the latter, there being something in the neighboushood of 20,000 of these hybrids employed in the sugar cane producing regions of the State. Relatively speaking, cattle, with us, seem to succumb to the intestinal form through the medium of infected grazing, while mules and horses contract the disease more through external inoculation, producing the cutaneous or carbuncular manifestations. This may be due, in part, to cattle being limited in their range to pastures previously infected; while the thinner skinned mules and horses are not so exposed, but are more so to external inoculation by flies, the thicker skin of the bovine affording it greater protection against that particular factor in transmission,

During an extensive outbreak of anthrax in Louisiana some eleven years ago, the writer personally witnessed on one cotton plantation as many as forty head of large mules (weighing from 1000lb to 1250lb) suffering from carbuncular anthrax. And strange as it may seem to those not familiar with anthrax conditions as we frequently find them here, almost every one of the cases recovered. It should be stated, however, that by the time these particular animals became infected, the enzootic had almost expended itself. Yet, at the beginning of this outbreak—which covered probably 100, or more, miles in extent, from 75 to 100 per cent. of the animals attacked died, while, toward the close, the percentage of recoveries represented just about the same figures.

Horse flies were, undoubtedly, the carriers of infection in this enzootic outbreak of anthrax, as they were in plague numbers at the time, during the height of summer, and the number of cases decreased or increased with the movement of the flies, which could be traced from point to point.

Since witnessing many outbreaks of anthrax of a very extensive character, and over widespread areas, in the southern part of the United States, during nearly twenty years, and which in fact only the few who may be similarly located, are privileged to see, the question has often arisen in the writer's mind as to whether the reduction in the virulence was due to attenuation of the bacterium, and how or whether it was possible for the flies to obtain sufficient of the toxin to transmit and produce a mild form of the disease from which the animals recovered—a vaccination so to speak. The latter may appear altogether untenable to those who have not had the opportunity to witness conditions such as exist in this part of the world during our summer seasons, when anthrax is very prevalent (and which, so far as we know, has never been actually demonstrated), and, necessarily, can form no conception of the myriads of horse flies present at such times. But some faint idea may be had when we state that, after the flies have been frightened from off the body of an animal, the appearance presented is that of its having been drenched with blood from a watering-can, the blood issuing from the hundreds of apertures made in the skin by the biting mouth-parts of the insects. Climatic conditions frequently limit the course of bacterial diseases and lessen virulence by attenuation of the organism; but, in the outbreak referred to, and others of a similar character, these conditions were altogether favourable to the growth and development of bacterial life, just as so much in fact as when the enzootic was at its height, with the temperature ranging in the neighbourhood of 90° F. Laboratory experiments go to show, if I am not mistaken, that a virus increases in virulence, up to a certain point at least, when it is passed through the bodies of a number of equally susceptible animals. Yet although inoculation is being carried on by these flies into the bodies of hundreds of the equally susceptible mules and horses, we seem to get quite the opposite results. May it be possible, perhaps, that the fly itself may effect in some way the attenuation or weakening of the organism during transit from one animal to another? Or, as previously alluded to, is it possible that the myriads of flies, sucking the blood of animals in all stages of the disease, may obtain a sufficiency of the toxin on their probosces to produce the effect of a vaccination rather than a virus in those cases which recover? The point is an extremely interesting one, although, as before hinted, conditions such as exist at times in this part of the United States is possible of realisation only by those who may have had similar experience in tropical or sub-tropical countries. The anthrax conditions obtaining in the "old country" where one victim constitutes an outbreak, afford but a very faint idea of the disease as we sometimes are confronted with it in some other parts of the world. And while in the intestinal form and in an isolated case diagnostic symptoms are frequently lacking, they are usually present in the carbuncular form which seems to be the more common where anthrax infection is spread over extensive areas by tabanids or other blood-sucking insects, which is the case here.

I might add that preventive inoculation is very largely practised in this and contiguous States where anthrax infection is more or less prevalent, and with very satisfactory results.

But on account of the principal mode of transmission and method of spread of the infection (flies largely) it is no doubt more essential with us than it

would be where the infection is confined to limited pasture areas, and consequently more readily controlled and possibly eliminated, as is the case on old country farms, and where the fly factor has not to be contended with, or, at least, to any appreciable extent.

Although somewhat prolix, and here and there a little irrelevant perhaps, I trust that the few points mentioned regarding anthrax conditions away from home may be of interest to those of your readers who are interested in the subject.

W. H. DALRYMPLE.

Louisiana State University,
Baton Rouge, U.S.A.

INTERMITTENT LAMENESS IN A HUNTER CAUSED BY A THORN.

This case appears to me to be worthy of record, owing to the length of time (seven weeks) which elapsed between the first sign of lameness and the discovery of the cause.

The subject of the lameness was an Infantry Major's charger, six years old, used for general purposes. On November 2nd last, whilst on leave in Dorsetshire, he hunted the mare; she afterwards walked home quite sound.

On November 4th she trotted lame on the off fore leg, and the next day was dead lame. About four days afterwards she was seen by a Civil Veterinary Surgeon, who, after thoroughly testing the lame leg, diagnosed some disease of the foot but could not find what the direct cause of the lameness was, as no symptoms were shown beyond the lameness. I understand that he treated her for foot lameness for about a week, and she then appeared to go sound for a while, but always after a little work lame again.

On December 13th a small sore was noticed just above the hoof on the inside, which the owner attributed to a blow or "stake" of some sort.

This intermittent lameness continued until the officer arrived back in Aldershot on duty about December 21st. He then noticed a discharge of pus from the wound. On the latter date she was brought to these sick lines, being a Government horse.

I found that she was still lame on the off fore leg. On the inside coronet, at the junction of the skin and hoof, there was a transverse suppurating wound about an inch in length, which showed signs of granulation. The foot appeared to have been badly shod, being longer on the outside than the inside, caused me to think that probably this wound was a result of a tread or some other interference of the near fore, aggravated by the abnormal sloping of the foot surface of the off fore.

Antiseptic fomentations were ordered, to be followed by dry bran poultices. Later the same day, on examining the wound thoroughly, deeply embedded in it a sharp strong briar thorn, about half an inch in length, was found surrounded by pus. After this had been extracted, and the wound treated in the usual way for three days with antiseptics etc., it soon healed up and the mare went quite sound, and has continued to do so since.

There is a possibility that this was not the region of the original entry of the foreign body, perhaps it had travelled to the coronet from some other part; but there, as a result of the inflammation and suppuration caused by it, an abscess had formed and burst, the thorn being thus discovered.

H. C. STEWART, A.V.C.

A.S.C. Infirmary, Aldershot.

COLIC. REMARKS SUGGESTED BY THE DISCUSSION AT THE CENTRAL V.M.S.

By G. MAYALL, M.R.C.V.S.

What is science but an intelligent reasoning on known facts, and the broader the facts probed which bear upon the matter to be investigated, the better the science.

Medical science often appears to me to be somewhat cramped by reason of dividing things, and sub-dividing them, and dwelling often solely on the medical aspect of matters without taking into account and calling to its assistance the *entourage*.

It was not without reason that our teachers told us in past years that the study of botany cultivated the power of observation and quickened the intellect, but as we pass along life's way observation often seems to be a matter "more honoured in the breach than the observance."

When I try to form an opinion as to what is the condition of things in a horse suffering from what is loosely termed "colic," I begin, if possible, by asking the attendant on the horse some questions; and generally the first one I ask is—When was this horse fed? Then, How long after he was fed was he seen to be in pain? And, Where was he when the pain was noticed?

If I am told that he was all right before he was fed and that shortly after that he developed pain, and if, in addition, I am told he is a quick feeder, I begin to think about his *stomach*. If I find the horse would rather stand up than lie down but exhibits pain by walking about, scraping, and, perhaps, sweating profusely, even if he doesn't vomit, I come to the conclusion that the mischief is in his stomach, and I believe, and find from post mortems, that I am generally right. When I want to exclude or include the stomach in my diagnosis that question *How long after eating food did the horse show signs of pain?* helps me more than all the imaginings of those who dwell on distension of the stomach exhibited externally and in life, and who have probably written lyric poetry.

I have never been able to diagnose distension of the stomach clinically, but I have often diagnosed stomach trouble. Much stomach trouble, however, goes undiagnosed because unnoticed, and I am firmly of opinion that horses suffer often from indigestion (by indigestion I mean pain in the stomach) and yet keep on working, and nobody knows anything about it. I say this because on post mortem examination where ruptured stomach has been diagnosed I have found abnormally thin stomach coats (exhibiting no acute changes) without the horse,

during a period of five or six years, ever having suffered from abdominal pain.

I do not regard the stomach in the horse as a very sensitive organ, and the same may be said, in a less degree, of the large colon, although the latter seems to be far more frequently the subject of inflammation than the former. Acute pain is, however, always manifested when one gets what has been called apoplexy of the colon (great thickening and yellowish jelly-like exudate occurring quickly, and far more common in some districts than others.)

Now in reference to bots which infest the stomach. A horse may die through bots or as a result of them. There is pain in the stomach, and probably elsewhere. Fæcal stasis occurs, and on post-mortem the fæces are semi-liquid. I know it is held by a good many that a horse does not die of bots, I think I have seen them do so. I once counted 400 of them in one stomach. There was no perforation: it was thin and congested looking, and there was fæcal stasis, and that horse died.

The thanks of the profession are due to about four gentlemen who have already recorded the fact that a horse may die through, because, or by reason of, bots.

Recently I had a case of stricture of the great colon, which is the only case I have ever seen of the kind. The two serous surfaces of the two branches of the colon were adherent at one point on their neighbouring surfaces for a space of about half a foot, and one branch had got slightly out of place across the other and constricted it considerably at the adherent point. The mare lived for three weeks, and was in slight pain off and on during that time. This goes to prove what Prof. Macqueen said at the Central V.M.S. meeting—"that in affections of the large bowel absence of acute symptoms is noticeable." This colon, besides being constricted, was the subject of intense inflammation at the sac preceding the stricture. Broadly, I think science has advanced as regards the diagnosis of stomach and large colon troubles. I think that in the great majority of cases we ought to be able to distinguish between these two affections. Twist of the small bowel and intussusception can only be guessed at. Rupture of the rectum may be mistaken for something else if we don't do any exploring. It is, however, diagnosable, and is a colic thing we ought to be certain about. Summing up and concluding, I think we ought to be able to diagnose fairly:—(1) Stomach affections, (2) Large colon trouble (3) Ruptured rectum.

FRACTURE OF THE ISCHIUM.

The following notes on a case of fracture of the ischium which came under my notice may be of interest to your readers.

The subject, a bay gelding six years old, employed in omnibus work, was sent into the infirmary about the end of October last, very lame near hind. There was no history of accident, but it was suspected that he had been down. The lameness did not suggest pelvic fracture. He was placed in a loose-box and hot water fomentations ordered to the affected limb.

At the end of a fortnight or so he could trot fairly sound, but on turning him sharply round to either side, and especially when backing him, he immediately knuckled over at the fetlock, to such an extent that the end of the metatarsal rested on the ground. At this stage he was seen by two of my colleagues. Injury to the anterior tibial nerve was diagnosed, and a further rest with a sharp blistering over the course of the nerve adopted. A month afterwards he was decidedly better, could trot soundly and the knuckling over had greatly diminished.

Unfortunately, the owners becoming impatient, he was destroyed. Post-mortem revealed a fracture through the ischium, which had not properly united, a kind of false joint being formed. There was a great deal of callus thrown out, which, pressing on the trunk of the great sciatic, caused paralysis of the extensor pedis.

The case is of some interest, as it comes under the same category as radial paralysis due to fractured first rib, and obturator nerve paralysis in the hind limb. I have seen paralysis of the extensor pedis causing similar symptoms after division of the anterior tibial nerve for the relief of spavin.

I think the case I now record would eventually have made a good recovery.

J. B. Hare, M.R.C.V.S.

THE SWINEY LECTURES.*

HORSES OF THE PAST AND PRESENT.

V.

The Origin of Domestic Breeds.

The subject is beset with difficulties. The records of breed societies give little help: the traditions of Arabs, still less. In some breeds no two authorities agree on what the distinguishing points are. The skeleton is the most trustworthy: but unfortunately they are few not a single example of an Arab being in any English Museum. In "*Marengo*," Napoleon's famous charger, we have one of a Barb; but it has not the points recognised by French hippologists.

An investigator, after studying all available material, has to decide what the essential points of each breed are. Some have been misled by taking an average; which is only useful if all domestic breeds are the offspring of one species; but is misleading if they have sprung from several.

In 1841 Colonel Hamilton Smith held that domestic horses had descended from five primitive stocks—the bay, the white, the black, the dun, and the piebald; but it is only the dun-coloured that has a claim to be considered a true wild horse—a Prejvalsky in fact.

Darwin held that "from the fertility of the most distant breeds when crossed," horses must have "descended from a single species."

* The first of these digests of lectures by Prof. J. Cossar Ewart, M.D., F.R.S., appeared in our issue of the 14th December.

In 1869 Sauson acknowledged no less than eight original stocks—*Africanus*, represented by Barbs; *Asiaticus*, by Arabs; *Germanicus*; *Frisius* or Flemish horses, we use to draw the funeral car; *Belgicus*, which brings home to us the Salutre type; *Brittanicus*; *Hibernicus* and *Sequanius*. But in 1901 he recognised but one species consisting of two varieties, the above *Africanus* and *Asiaticus*, which included the other six.

Pietremont held that horses were domesticated in eight areas:—(1) South of the Altai mountains, where Sauson's *Africanus* was domesticated by the Mongols; (2) West of the Ala Tan Mountains, near Lake Balkash, where Aryans domesticated Sauson's *Asiaticus*; (3) Flanders, where *Frisius* was domesticated; (4) Germany, where *Germanicus* was trained; (5) Belgium where *Belgicus* was; (6) England and part of France, where *Brittanicus* was bitted and bridled; (7) The British Isles and Brittany, where *hibernicus* has helped to develope man; (8) Normandy, the schoolroom of *Sequanius*.

Frank holds that domestic horses have sprung from two varieties:—(1) An Oriental or Eastern, including all the finer breeds; and (2) an Occidental or Western, embracing those with heavy heads and coarse limbs; derived from *Equus caballis fossilis* of Europe.

Professor Marcella Boule, from his exhaustive study of the teeth and bones of horses from the Pliocene and Pleistocene deposits of France and Algiers, concludes that *Equus stenonis* gave rise to a small species *Equus ligeris*, the ancestor of the Burchell group of zebras, and a large species *Equus robustus*, which in Europe played such an important part in forming domestic breeds.

Prof. Ridgway concludes that all improved breeds are the result of a blend, in varying degrees of a fine bay species, *Equus libycus*, of North Africa with a coarse, thick-set species, which originally belonged to Upper Europe and Upper Asia. The blending of this bay with the white or dun aboriginal horse of Eurasia he thinks accounts for greys, piebalds, chestnuts, etc. The coarse, thick-set, slow horse of Eurasia he believes was either derived from *Equus prejvalskii* or branched off from the same ancestor and long continued to develop on nearly the same lines, and that the fleet bay horse of North Africa may have come from a variety of *Equus stenonis*, which crossed from Europe to Africa in prehistoric days, where, owing to differences in environment, it became highly specialised.

Mr. R. W. Lydekker, of the British Museum, says the Norwegian or Dun type "may be regarded as probably derived from the wild Mongolian horse," and regards it as practically identical with the big-headed cave horse of the Palæolithic Period, and that *Equus sivalensis* "may have been the ancestral stock from which Barbs, Arabs and Thoroughbreds are derived."

Origin of Arabs.—After comparing all available skulls and limb bones, Professor Cossar Ewart concludes that in the highest type of Arabs: (1) the face should have an index of 54; (2) the skull bent, so that a line continued along the floor of the brain cavity emerges just above the top of the nasals; (3) the bones of the neck long; (4) the lumbar vertebræ five in number; (5) the pelvis long; (6) the metacarpals, in length, seven and a half times their width; (7) the length of the metatarsals nine and a half times their width; (8) the ulna nearly or quite complete.

While some Arabs nearly approach the ideal type, they are as a whole a "race of great intermixture." In some of the most beautiful, the face is short, and broad between the eyes as in Norwegian ponies; in others, the face is long and deflected; suggesting ancestors of the Prejvalsky type or of that represented by the Pliocene horses preserved in the Swalik hills of India.

Thinking it probable that Professor Ridgway is right in concluding, on historical grounds, that a fleet horse was evolved on the Libyan plateau, he looks forward to the discovery of fossil evidence being found in North Africa. He believes that horses of North Africa lived in Salutrian days, and that the Ramagen or Prejvalsky type probably did browse there.

The fine Auvergne type doubtless flourished on the Libyan plateau—the Salutre type on low ground, and the Remagen probably died out.

The Lybyan horses were fleeter, more manageable and better mounts than those of Eurasia; so little wonder Hannibal introduced them into Spain. Though this ancient type does not exist now it can be reproduced by crossing an Andalusian with an Iceland pony. This result, says Dr. Cossar Ewart, supports Prof. Ridgway's view, that fleet horses with fine heads and fine limbs probably originated in Africa: but no evidence that it was a bay with white points.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

The quarterly meeting was held at the Grand Hotel, Manchester, on 5th December, 1907, the President, Albert H. Darwell, Esq., Northwich, in the chair; and the attendance included: Messrs. Wolstenholme, Michaelis, Gubbin, Lloyd, Smith, Giblin, A. Lawson, Clarkson, Stent, S. Locke, Martin, Taylor, Faulkner, A. Munro, jun., Woods, Norbury, Brittlebank, and G. H. Locke. Visitor, Mr. A. W. Noel Pillers.

Apologies for absence were received from Messrs. Sumner, Carter, Burndred, Abson, Hughes, and Packman.

The minutes of the last meeting were taken as read on the proposition of Mr. S. Locke, seconded by Mr. Faulkner.

Mr. WOLSTENHOLME proposed, and Mr. Lawson seconded, that the minutes of the special meeting held on Oct. 1st., 1907, be taken as read. This was carried.

Mr. G. H. LOCKE made a statement as to the appeal for funds in connection with the recent anthrax prosecution. He stated that something like £10 is still required and wished to draw the attention of the profession to this.

Letters of acknowledgment from Mr. W. A. Taylor and Mr. F. G. Edwards were read thanking the Society for the votes of condolence passed to them in their recent bereavements.

Letters of resignation from Mr. W. Kendall and Mr. Jas. Marshall were read. The resignations were accepted with regret, on the proposal of Mr. S. Locke, seconded by Mr. Faulkner.

Mr. S. C. BINKS, Wilmslow, was elected a member of the Association, on the proposition of Mr. Brittlebank, seconded by Mr. G. H. Locke.

In the absence of the Treasurer, the Secretary read out the names of three members who are in arrear with

their subscriptions. As several applications for these had been ignored it was decided that the names of the three members should be removed from the register, on the proposition of Mr. W. A. Taylor, seconded by Mr. G. H. Locke.

Election of Council, of R.C.V.S.

Mr. G. H. Locke pointed out that nominations had to be in earlier than usual to enable colonial members to vote. There was no nominee of the Lancashire V.M.A. resigning this year. He suggested they should wait to see what their co-societies were doing.

Mr. Lawson proposed, and Mr. Faulkner seconded, that this course be adopted, and it was carried.

Election of Officers.

President.—Mr. Faulkner remarked that Mr. Chorlton had been a member of the Association since 1892, and bearing in mind that he had acted as Auditor to the Veterinary Benevolent Mutual Defence Society, he thought they could not do better than elect him as President. He was sure the duties would be efficiently carried out. He begged to propose the name of Mr Chorlton.

Mr. Wolstenholme, in seconding the proposal, reminded the meeting that formerly Mr. Chorlton had been Secretary to the Society, and was therefore quite fitted for the position. The proposal was carried unanimously.

Mr. Chorlton was not present, and it was subsequently announcedthat he had refused the proferred position as President, owing to ill-health.

Mr. Taylor then proposed the name of Mr. Stent, who, he said, had been a member of the Association for many years, and who had always taken an active interest in the welfare of the Society. After Mr. G. H. Locke had seconded the proposal, it was unanimously carried, and Mr. Stent returned thanks for the honour conferred upon him.

Vice-Presidents.—Messrs. Eaton-Jones and Stent were elected; proposed by Mr. Taylor, seconded by Mr. G. H. Locke. Owing to the alteration of the President, it became necessary to elect another Vice-President, and Mr. Harrison Bowden was thus elected. Mr. Darwell *ex-officio*.

Hon. Treasurer.—Mr. Packman was re-elected, on the motion of Mr. Woods, seconded by Mr. Wolstenholme.

Hon. Secretary.—Mr. G. H. Locke was proposed by Mr. Lloyd, and Mr. Faulkner, in seconding, said that the Society would be indebted to Mr. Locke if he would continue in office.

Auditors.—Messrs. Faulkner and Campbell were re-elected. Proposed by Mr. Wolstenholme, seconded by Mr. Taylor.

Council.—Mr. Dawson proposed that the Council of the Society be re-elected. Mr. Lawson seconded, and it was carried.

It was resolved that arrangements be made as usual for the annual dinner.

Mr. Stent said that twelve months ago he had drawn attention to the need of the Society for a library and instruments. He now wished to know if anything had been done in the matter.

Mr. G. H. Locke drew his attention to the decision of the Council as submitted to the meeting in December last—that the Association had not a suitable habitat for a collection of books, but suggested the purchase of a few instruments. Members were invited to name which instruments should be obtained, but hitherto no suggestions had been received.

Mr. Taylor remarked that any member wishing the Society to purchase certain instruments should make written application.

"The Present Methods of Notification under the Contagious Diseases (Animals) Acts."

By Mr. J. W. Brittlebank, M.R.C.V.S.

Mr. President and Gentlemen,—At a special meeting of this Society on October 1st last, I gave notice that I would bring forward for discussion the Methods of notification under the Contagious Diseases (Animals) Act, and in doing so I feel that there is no apology needed, as I am convinced we have matter for consideration which is intimately connected with the professional interests of our calling.

The anomalous condition of affairs existing to-day is one to which we have been, in my opinion, subjected long enough. It is not at all necessary in any way to revile or find fault with the Government Department whose duty it is to administer those Acts and Orders in force for the control and suppression of such diseases as are communicable from animal to man and animal to animal. I think we are all satisfied that the law has been administered to the best of their ability. But it is surely open to us to review our position and the progress we have made during the last decade, and to see whether we are satisfied with matters as they at present stand, and whether we are content to continue as we have done. No doubt the present position which the profession occupies with regard to the control of contagious diseases is to some extent a natural one in a young profession such as ours. Undoubtedly our professional history is a short one, but I think we may claim it to be creditable to ourselves. It is, however, our duty if convinced that we are capable of performing better service in the cause of humanity, by our extended association with that great branch of medicine now known as Preventive medicine, to make known in no uncertain manner that we are fit and proper persons, fully capable of performing our share in the great field of medicine, and at the same time attain for ourselves those positions of responsibility which are our right.

I regard the present time as one of very great possibilities, one of the most crucial in the whole history of our profession, we are, in fact, waiting our opportunities. There is a pronounced wave of anxiety passing over the people of this country with regard to matters of Public Health and sanitation generally, and in time many reforms will follow. Openings will present themselves for veterinarians, and it behoves us to keep a very careful watch over the progress of events, as these positions will not become ours without some effort on our own part. There are many outside our profession who recognise the fact that as years go on the veterinary officer will be an indispensable addition to the Public Health Staff of all authorities, and who, being aware of this and in view of the present positions which they occupy, will take care to try and control matters so that the veterinary surgeon, instead of occupying a position of authority, shall be subservient to them.

Take the position to-day of the general practitioner with regard to the administration of the contagious diseases and let us see what his powers are and of what service he is in the prevention of contagious diseases. We have only to take the position of a fellow practitioner as in the case lately of the anthrax prosecution at Knutsford. Is it not ridiculous that we, members of an honourable calling, a calling to which we are only admitted after careful training in the art of veterinary medicine and surgery, shall not be allowed to even take steps to ascertain the nature of a disease if we suspect it to have been anthrax. The law is clear on the subject; let me quote clause 7, sub-section 3 "Before a carcase is removed for burial or destruction under this article all the natural openings thereof shall be plugged with tow or some suitable material saturated in strong solution of

carbolic acid or other suitable disinfectant. *In no case shall the skin of the carcase be cut, nor shall anything be done to cause the effusion of blood, except by or under the supervision of a Veterinary Inspector, and so far as may be necessary for the purpose of microscopical examination.*" You will note that the practitioner who may have been called in has no power to do anything. He must advise his client that it is a suspicious case, and he (the owner) must seek out the nearest police constable and notify to him. The practitioner has not even the right to notify, he is a mere deadhead in the whole matter.

The diseases included and dealt with under the Contagious Diseases (Animals) Act 1894 are: Cattle Plague, Pleuro-Pneumonia Contagiosa, Foot-and-Mouth Disease, Sheep-pox, Sheep-scab, Swine-fever, Glanders, Anthrax, and Epizootic Lymphangitis.

Now the preliminary procedure under all these Acts is the same, and the preliminary clause dealing with all these diseases is as follows:

(1) Every person having, or having had, in his possession, or under his charge, an animal affected with or suspected of disease, shall with all practicable speed give notice of the fact of the animal being so affected or suspected to a constable of the police force for the police area wherein the animal so affected or suspected is or was."

This wise and omnipotent being's duty is to report to the Inspector (police), he will then most likely visit the farm and examine the animal or animals, and very likely pass his opinion upon them.

The farmer may have (but usually has not) called in his veterinary adviser, who has no power to notify to a proper authority—who, I contend, should be a Veterinary Officer of Health.

Let us see what is the position of the medical practitioner in like circumstances. The Infectious Diseases (Notification) Act 1889 provides, as its name indicates, for the notification of all scheduled infectious diseases.

Section III. states as follows:—

(1) Where an inmate of any building used for human habitation within a district to which the Act extends is suffering from an infectious disease to which this Act applies, then, unless such building is a hospital in which persons suffering from an infectious disease are received, the following provisions shall have effect, that is to say:—

(*a*) The head of the family to which such inmate (in the Act referred to as the patient) belongs, and in his default the nearest relatives of the patient present, and in default of such relatives every person in charge of or in attendance on the patient, and in default of any such person the occupier of the building shall, as soon as he becomes aware that the patient is suffering from an infectious disease to which the Act applies, send notice thereof to the Medical Officer of Health of the district.

(*b*) Every medical practitioner attending on or called in to visit the patient shall forthwith, on becoming aware that the patient is suffering from an infectious disease to which this Act applies, send to the Medical Officer of Health for the district a certificate stating the name of the patient, the situation of the building, and the infectious disease from which, in the opinion of such medical practitioner, the patient is suffering.

(2) Every person required by this section to give a notice or certificate who fails to give the same, shall be liable on summary conviction in manner provided by the Summary Jurisdiction Acts to a fine not exceeding forty shillings."

You will note that there is here no mention of the police constable, and surely if it all amounts to a matter of expediency it would be more simple for the head of the family to just walk outside and find a police constable, but no, the effect is to make the medical adviser part and parcel of their preventive medicine service by placing this responsibility on him and paying him a fee for his notification. Why is this not so with the veterinary surgeon in general practice? Is it that he is not a reliable person or a person sufficiently trained to do this work? It seems as if some such suspicions were in the minds of the law makers when these Acts were drawn up. It may be stated of course that the profession does not wish to take on such responsibility, and I am grateful to Professor Williams for reminding me that some years ago the profession was asked if they wished for such alterations and that the answer was in the negative, but I venture to say that many of those gentlemen who then said No, would, in the light of present day knowledge, if asked answer in the affirmative.

Let me draw your attention to the enormous and splendid progress made by the medical profession in their great branch connected with the public health service, and I may venture to express an opinion that this position was attained primarily to some extent by the passing of the Public Health Act 1875, but very materially by the passing of the Infectious Diseases (Notifications) Act 1889, for it is, roughly speaking, within the last twenty years that their greatest advance has been made. The result is that at the present day when any outbreak of disease occurs in any district the medical officer has authority to deal with it at once. It is in fact the process of decentralisation which is, in my opinion, essential for the successful coping with disease. There is no needless referring to a Government Department in London before anything can be done. The whole tendency in matters veterinary is to centralise every portion of the administration, and when the country thoroughly recognises its responsibilities towards the agricultural interest I venture to say that the machinery at present in existence must break down.

I may be asked in what direction there is likely to be any material advance in the prevention of disease, and many avenues of extension at once occur to me. Is it safe for a moment to suppose that this country will go on many more years without attempting to deal with tuberculosis, epizootic abortion, etc. I venture to state that extension of legislation is very much nearer than many suppose, and it lies with the profession generally to make an effort to occupy the important position which they undoubtedly should, and in this legislation for the eradication of tuberculosis I venture the opinion that one of the most useful officers of the State will be the veterinarian in general practice.

May I give you an example of how present day methods work. In Manchester we have a special Act dealing with tuberculosis and milk, named the Milk Clauses of the Manchester General Powers Act 1899, and the main purpose of these clauses is to prevent the sale of tuberculous milk by requiring the farmer to notify to the Medical Officer of Health the fact that he has in his herd a cow or cows showing signs of tuberculosis of the udder. A few notifications are received, but mainly these infective cows have to be discovered by a roundabout process of examining the milk first, and there is no doubt that a great amount of good has been accomplished even under such unsatisfactory powers as we possess. What, as a matter of fact, does happen at these farms is that many farmers call in their veterinary advisers who advise them to sell the suspected animals, and so become to some extent accessories to the hiding of these animals. It would not matter if these cows were removed and did not again enter a milking herd, but it has been my misfortune occasionally to follow such animals from farm to farm. I do not, of course, altogether blame the practitioner—he would be foolish to quarrel with his client—but I am quite certain, from my knowledge of many gentlemen whose practices lie within those areas covered by my inspection, that they would be willing to notify if empowered by law and paid for so doing.

I merely cite this as an example of what happens in one particular case, but I am convinced that there are to-day many cases of contagious disease which are surreptitiously dealt with, and may be the real centre of an outbreak of such magnitude as to be impossible to suppress from the authorities; the cause of such outbreaks being the subject of conjecture for many days. This is no haphazard opinion which I express, but what I definitely know.

I trust you will forgive the many deficiences of this short paper—my only reason for bringing it before this Society for discussion is that I feel that we have not recognised our responsibility. That we are, as I stated earlier, approaching an important period in sanitary progress, and that we should endeavour to obtain that recognition which is our right, and those positions for which we are specially fitted.

The suppression of communicable diseases is a question which will loom largely before the legislature, and in my opinion one of the first steps towards the establishment of a Veterinary Health Service is to obtain for the general practitioner the power to notify contagious diseases, and so make his services more valuable to his clients and to the community.

Discussion.

Mr. Lloyd wished to associate himself with everything Mr. Brittlebank had said. From his own experience he could support the remarks made respecting the disposal of cows suffering from tuberculosis of the udder.

Mr. Lawson wished to know if it was suggested that they should deal with the Contagious Diseases Act in the same manner that medical officers of health did in infectious diseases. Of course all doctors give notice of any such disease to the Medical Officer of Health.

Mr. Brittlebank, replying, said he was strongly of opinion that a veterinary surgeon ought to be required to notify any of the contagious diseases and be paid for so doing. At present there was no proper machinery in the shape of a veterinary officer of health to whom notification should be made, but he thought that veterinary surgeons ought to be willing, as a preliminary step, to notify to the chief constable, as there was no doubt that the appointment of professional men in positions of authority would only be a matter of time.

He thought the profession ought to see the benefit that would accrue to them by accepting the responsibility of notifying all contagious diseases.

Mr. Woods thought that with the general tenor of the paper no one could find fault. It appeared to him, however, that the paper should follow something else. For the last four years he (Mr. Woods) had been trying to preach that while the central body in London is probably the best body to deal with an invasion to our shores of contagious disease from abroad, the central body is not the best body to deal with infectious diseases which are indigenous to this country. The local conditions are different in different parts of the country, and certain regulations which might be sufficient to stamp out, say, swine fever in one district of England, would be different to the local conditions which might be required to stamp out that disease in another part of the country.

He had tried to preach that there should be a division of the country into local areas, presided over by a veterinary officer of health for each county, and that notification in cases of those indigenous diseases should be made to that officer. The officer would be the advisor to the County Council as to what laws would be required to stamp out disease in their area. Until they got these local officers of health there would be great difficulty in carrying out Mr. Brittlebank's proposals. Such an officer would have to be independent of practice, and then all veterinary surgeons would be willing to notify. Certainly some scheme might be thought out to effectually deal with these contagious diseases.

When he mentioned this to those in authority, the reply was that some years ago the local authorities were entrusted to make their own regulations, with the result that very few stamped out anything. Some authorities took action, others did not, but the reply was conclusive. Why did some take action and others not? Because they had no one to advise them. If they had had a veterinary officer of health the matter would have been dealt with effectively. He would make the officer responsible for the condition of contagious disease within his area, and would call upon him to explain why disease had not been stamped out.

In connection with the notification of disease under the Contagious Diseases (Animals) Act, he did not know whether they were aware that anthrax has to be notified to the Medical Officer of Health. Why it was so he failed to see. He also noticed that in January next a new Act for glanders was coming into operation, and under that Act an outbreak of glanders had to be notified to the Medical Officer of Health. It appeared to him that the Local Government Board were subordinating the veterinary to the medical profession.

Mr. Clarkson remembered that societies were circularised some years ago on the subject of notification, and the impression was that with the present machinery members would not notify. The veterinary officer should give the whole of his time to the work, and then veterinary surgeons would welcome compulsory notification with a small fee. Respecting the removal of tuberculous cattle, he thought the one thing wanted was compensation.

Mr. Faulkner considered that compulsory notification would be all right if they could have the identical machinery and precedure they had under the Public Health Act, but until they had that the discussion seemed a little in advance.

With regard to compelling a member of the veterinary profession to notify, he considered it absolutely necessary that there should also be stringent laws as affecting the owner, because there would be certain cases where the veterinary surgeon would not be called in at all if he was compelled to notify. Members of the profession would all know the difficulty of getting owners to consent to a report being made respecting, say, an outbreak of glanders.

Mr. Pillers pointed out with regard to reporting certain diseases to the Medical Officer of Health that it was probably because such diseases as glanders and anthrax were communicable to man, and it would be useful to the Medical Officer to know about the occurrence of such diseases, especially if he had cases of sickness notified which presented obscure signs of either of these diseases.

Mr. Lloyd observed that the Local Government Board sent out in 1891 a list of duties which had to be performed by local authorities, medical officers, and sanitary inspectors. The latter were entrusted with the duties of inspectors under the Diseases of Animals Act.

Mr. Wolstenholme did not take so much objection as Mr. Brittlebank to the present mode of notification. The policeman was simply the representative of the authority. They had nothing to do with the man, it was the office he represented. He thought the time had come when it should be obligatory for every veterinary surgeon, as well as every owner—and the first obligation should rest on the owner—to notify any and every outbreak of disease which comes under their notice. It was high time that fresh organisation should take place in this matter of diseases of animals on the lines set forth by Mr. Brittlebank. If there had been a public officer set apart for the work, there would not have been the trouble in the recent anthrax case.

Respecting the present control of milk from tuberculous cows, several cities have acquired powers from Parliament whereby they can go to the source from whence milk comes to their district, but there is nothing

whatever to prevent a particular farmer to go on sending his milk to another town. There should be legislation which would cover the whole country. Here again veterinary officers should be appointed

Mr. S. LOCKE thought the time was fast approaching when there would be great changes in the Public Health service. If they could obtain a veterinary advisor to the Local Government Board their profession would be better looked after. A resolution on the matter from the Association to the Council of the R.C.V.S. might possibly lead to steps being taken to procure such an appointment.

The PRESIDENT agreed as to the necessity for a central body to whom each case of contagious disease could be notified. Owners should be compensated for each animal slaughtered.

Mr. BRITTLEBANK returned thanks for the kindly way in which his remarks (he did not wish it to be considered as a paper) had been discussed. He would particularly like to thank Mr. Woods for the remarks he had made, with which he quite agreed—that it would be better to have a veterinary medical officer for each county or division—but he was afraid, and had strong reasons for thinking so, that there would be considerable influence brought to bear from outside with regard to the establishment of these officers in independent positions of authority.

Personally he would be willing, as a veterinary surgeon who had been in country practice, and had served as inspector, to notify to a responsible person, such as the chief constable, any disease requiring to be notified. He agreed as regards fitness of the Board of Agriculture to delegate powers to local authorities, but such authorities would have to report to the central authority in London. Any administrative powers delegated should be absolutely compulsory in character.

As to representations being made to the Local Government Board for the appointment of a veterinary advisor, he doubted whether such representations would be entertained.

Replying to Mr. Faulkner, he pointed out that the clause in the Infectious Diseases Notification Act referring to the responsibility of notification placed an equal responsibility on the parent or relative along with the medical practititioner. It would of course be necessary that similar responsibilities should be placed upon owners as he had suggested should be placed upon veterinary officers.

Mr. G. H. LOCKE drew attention to a circular which had been sent out to various Associations respecting the testimonial to Mr. Hunting.

Mr. FAULKNER proposed, and Mr. Taylor seconded, that a donation of five guineas be contributed to this very deserving testimonial.—This was carried.

"SOME SUGGESTIONS ON THE CONTROL OF SWINE FEVER."—By J. S. LLOYD, F.R.C.V.S., D.V.S.M. VICT., Chief Veterinary Inspector, Sheffield.

[The paper has already appeared. Pp. 432 to 499].

The PRESIDENT expressed gratification with the paper. If anything, it contained more material for thought and discussion than there was time for at that meeting, and he thought it would be well to postpone the discussion.

Mr. BRITTLEBANK proposed that the discussion be adjourned until the next quarterly meeting, and Mr. Lawson seconded.—This was carried.

Mr. S. LOCKE proposed a cordial vote of thanks to the retiring officers. Mr. Gabbin seconded this, and it was carried unanimously.

Mr. LAWSON proposed a vote of thanks to Mr. Brittlebank and Mr. Lloyd for their interesting contributions. He also proposed, as the outcome of the discussion of the first paper, that a resolution might be sent to other Societies for discussion to the following effect: "That veterinary surgeons be required to notify all cases of contagious disease, and should receive payment for the same."

Objection was taken to the latter proposal by Mr. Taylor and Mr. Faulkner, whereupon Mr. Lawson withdrew it.—The vote of thanks was carried.

TRANSVAAL VETERINARY MEDICAL ASSOCIATION.

The eighteenth quarterly general meeting was held in the Goldfields Hotel, Johannesburg, on the 30th September, 1907. Present—Messrs. Christy (chair), Dunphy, Johnston, Bell, Runciman, Chalmers, May, Walker, Lindsay, Garraway, Pilkington, Kellett, Gavin and Dale (Hon. Secretary).

1. Minutes of the last general meeting were read, corrected and passed.

2. The TREASURER informed the meeting that he had paid £108 deposit to current account.

3. The PRESIDENT made a statement with regard to what had been done in the matter of the Veterinary Surgeons Ordinance. He said that a number of members of the Government had been interviewed and that considerable pains had been taken to sound the views of members of the Legislative Assembly; that the opinion was unanimous, it was not advisable at present to bring forward the Ordinance, as there was every likelihood that it would be thrown out. It had therefore been decided by the Sub-Committee to do nothing at present. The course adopted was approved and confirmed by the meeting.

4. A vote of thanks to the Parliamentary Committee was proposed by Mr. Chalmers, seconded by Mr. Runciman, and carried unanimously.

5. Mr. SCHOFIELD, A.V.C., was unanimously elected a Member of the Association.

6. Messrs. Dunphy and Johnstone were appointed to act with the Chairman as Scrutineers of the Election of Officers for the ensuing year.

7. The PRESIDENT declared the following elected:—*President:* Mr. T. H. Dale, G.V.S., Potchefstroom; *Vice-President:* Mr. J. K. Pilkington, Johannesburg; *Hon. Treasurer:* Mr. J. H. Bell, G.V.S., Krugersdorp; *Hon. Secretary:* Mr. J. Chalmers, G.V.S., Heidelberg; *Council:* Messrs. Christy, Kellett, Gray, Conacher, Gavin and Runciman.

Mr. CHRISTY thanked the members for the support given him and expressed pleasure in vacating the chair in favour of the newly-elected President, Mr. T. H. Dale. He then retired amidst applause.

Mr. DALE took the chair, thanking members for the honour conferred on him, and trusting with their support and that of the new Secretary to carry out the duties as had been done during the last two years by Mr. Christy.

8. The PRESIDENT read two letters received from the Secretary of the Cape Colony Veterinary Association *re* Transvaal Ordinance Regulations, to both of which he had replied, more particularly in respect to military officers practising, and the inspection of abattoirs and dairies.

Mr. DUNPHY stated that he knew of military officers who did private practice, and he thought they ought to pay a registration fee. There was no private practitioner in the places where these military officers had so acted.

Mr. KELLETT spoke in reference to inspection of abattoirs and dairies, said that veterinary surgeons should do this work, and that the letters referred to by the President should be answered to that effect.

Above proposed as a resolution by Mr. Kellett, seconded by Mr. Dunphy.

9. ANNUAL REGISTRATION FEE OF R.C V.S.—Mr. CHALMERS pointed out that as the R.C.V.S. did not support Colonial M.R.C.V.S. he proposed a fee of only 10/6 be agreed upon.

Mr. PILKINGTON said it was a matter of principle and not £ s. d. He supported Mr. Chalmers, but thought M.R.C.V.S. in the Transvaal should be exempt from a Registration Fee.

Mr. BELL proposed as an amendment that this Society agree to the fee of one guinea.

Mr. CHRISTY was of the opinion that this decision was an important one. If the T.V.M.A. decided not to support the R.C.V.S. the position of the profession would not be advanced. As a matter of principle the T.V.M.A. should give financial support. He seconded Mr. Bell's amendment.

Mr. BELL pointed out the strong financial position of the T.V.M.A. He stated that the minutes would be distributed amongst members of the profession in other parts, and that if this Society did not express its intention to support the R.C.V.S. it would be unfavourably criticised.

Mr. CHALMERS withdrew his proposal as it had been his intention to create discussion amongst the silent members.

Mr. KELLETT did not think this Society should be expected to support the R.C.V.S. to the extent of a guinea.

Mr. PILKINGTON proposed that a resolution be passed by the T.V.M.A. that 10/6 should be a sufficient fee for members in the Colonies to pay for Registration.—Mr. Kellett seconded.

Mr. Bell's amendment was put to the meeting and carried by 11 votes to 2.

10. The PRESIDENT introduced the subject of the Memorial to Dr. Hutcheon, and mentioned that at the Council meeting held previous to the general meeting a contribution of £20 from the funds of the T.V.M.A. had been passed.

Mr. DUNPHY asked if this was an individual matter.

The PRESIDENT replied it was not, but was a contribution from the funds of the Society.

Mr. DUNPHY moved that the Council's recommendation of a donation of £20 be approved.—Mr. Gavin seconded.

11. GENERAL BUSINESS.—Mr. CHALMERS brought up the question in reference to a meeting of the Society being held once annually in Pretoria.

The PRESIDENT pointed out that this proposition was out of order according to Rule 35.

Mr. BELL submitted Treasurer's statements.

BALANCE SHEET 1906-7.

REVENUE.

1906.					
March 31.—To Credit Balance, 1905-6			£199	11	5
1907.					
June 30.	„ Subscriptions, 1906-7	£44 4			
„	„ Arrears Paid, 1905-6	15 15			
			59	19	0
			£259	10	5

EXPENDITURE.

1906				
May 5.—To Hon. Sec. Dale for expenses,		£7	3	6
Oct. 25	„ Bank Stamps on c.c.	0	0	3
1907				
March 22.—To Bank Stamp on c.c.		0	0	1
April 6.	„ Hon. Sec. Dale for expenses,	12	10	0
June 30.	By Credit Balance at Bank	239	16	7
		£259	10	5

REVENUE.

1907					
July 1.—To Credit Balance				£239	16 7
23	„ African Bank	£103	14 9		
„	„	4	3 2		
Sept. 12	„ Subscriptions 1906-7	4	4 0		
23	„ „ „	3	3 0		
				115	4 11
				£355	1 6

EXPENDITURE—*Nil.*

Arrears Due, 1906-7 £67 4 0

Krugersdorp, September 27th, 1907.

Mr. CHALMERS asked questions in reference to arrears of subscriptions and as to what action the Treasurer had taken concerning the resolution passed at last general meeting in connection with this subject.

Mr. BELL replied by stating the names of members who were in arrear.

Mr. CHRISTY brought forward the complaint of two members who affirm they have never received circulars from the T.V.M.A. One of these is willing to join the Society now but not to be compelled to pay back subscriptions. It was suggested by Mr. Christy that he write privately on this matter.

The other member does not wish to belong to the Society.

The PRESIDENT pointed out that one was not a member of the Society, he not having been proposed. The other was duly elected and having been so, at a time when there was a change of Secretary, he may not have been notified, but that, since then, he had got copies of minutes, etc., posted to him.

Mr. CHRISTY suggested the Secretary be instructed to write him to the above effect. The President seconded Mr. Christy's suggestion. Carried.

The PRESIDENT intimated auditors were required. Mr. Christy proposed Messrs. Gavin and Runciman. Mr. Dunphy seconded.

12. The PRESIDENT read his paper on "Sheep Diseases."

TWO UNDESCRIBED DISEASES OF SHEEP.

By THOMAS H. DALE, M.R.C.V.S.
Govt. Vet. Surgeon, Potchefstroom, Transvaal.

Mr. Chairman and Gentlemen,—The subject which I have the honour to bring before your notice to-day is one which will not, perhaps, appeal to the general practitioner. There are several reasons for this, the principle one being perhaps the fact that he is seldom called on to prescribe for a sick sheep. I hope, however, that he will bear with me and with my brothers from the back veld, who are daily brought into contact with sheep, while we relate our experiences and express our opinions. Here it may be as well if I explain that I have not come before you prepared to sketch a new disease from its initial symptoms through its successive and progressive stages to a triumphant recovery. This is the sort of thing one would like to do: this is the termination one hopes for, but which unfortunately in the two diseases I am about to describe one never gets.

I take it that one of the objects of this Society is mutual help, not only help to improve our social status and guard our interests, but assistance, one from the other, to help to elucidate the many problems which are daily presented for solution, and in describing to you the two diseases which I am presenting for your consideration to-day I hope you will rectify any errors I make, fill any omissions, and offer any suggestions that may help us to a better understanding of the diseases peculiar to sheep, with their treatment and prevention.

The first disease has been known to the farmers in the Mooi River Ward of the Potchefstroom District for many years, and is known by the local name of Schielyke Ziekte, in fact so well was it known before the war, and to such a cost, that there were many farms along the valley of the Mooi River above Potchefstroom that had not carried sheep for years owing to the heavy mortality —so heavy that flocks were practically wiped out. After the war however many of these farms changed into other hands, and in some cases as a result of ignorance of the conditions and history of the farm, and in others in spite of warnings and dire prophesies, these farms were stocked with sheep. It was not long however before they began to die, and to die in the sudden and strange manner which is characteristic of the disease, the mortality continuing with steady regularity until the animals were moved on to what may be called for lack of a better term "clean veld," when it as suddenly ceased. The term Schielyke Ziekte is perhaps not exact enough, but in the present state of our knowledge will serve, for it labels the disease with its most pronounced characteristic, as there are apparently no premonitory symptoms, the animal usually being found dead either in the kraal in the morning or anywhere on the veld during the day. I have however seen several animals die from the disease, in one case the animal showed so little sign of disease that it was one of the leaders of the flock. As they grazed towards the kraal at sundown, the animal in question appeared to stumble, staggered along for a few paces on its knees as though attempting to gain its feet, its head then dropped between its forelegs and it rolled over on its side. I was only some 40 paces from it but on reaching it found that it was already dead, a very careful post mortem examination was made, the animal being carried into the house for the purpose. In addition, blood was taken at once and defibrinated, blood smears were made for later microscopic examination, and slope and stab cultures were made on agar and other media. The post mortem in this case, as in all others dying from this disease, was unsatisfactory and yielded nothing of real diagnostic value. The heart is pale in colour, flabby, but not enlarged, and always covered on its epicard with minute petechiæ, the pericardium always contains a variable quantity of a colourless fluid which coagulates on exposure to the atmosphere, the fourth stomach is invariably slightly inflamed, but this does not extend to the bowels which present a normal appearance. This also applies to lungs, spleen, liver, and kidneys, in fact the usual signs associated with diseases caused by the presence of an endoglobular parasite are absent, the microscope in fact confirms this, and fails to demonstrate any abnormality in the blood, while blood injected into healthy sheep both subcutaneously and interjugularly gave a negative result. Dr. Theiler was able to confirm these experiments from material supplied by me, and informed me that both slope and stab cultures failed to grow. Various methods of treatment were tried, but without any appreciable result, but in every case where the sheep were moved from the low lying lands along the Mooi River to higher veld, although it might be only a few miles away, in fact in some cases on the same farm, the disease stopped within three or four days. It therefore appears that the period of incubation cannot be longer than four days at the outside. Many affected flocks are badly infested with internal parasites, hairworm, tapeworm, liver tape worm, and Œsophagastoma Columbianum which is so common in the Western Transvaal. It was at first thought that the presence of these parasites might have some bearing on the disease, although some flocks were apparently free from them, but this does not appear to be so, or the disease would not stop on the removal of the animals to fresh veld. The possibility of poison was not overlooked, but nothing of a suspicious nature was found, and if it is a poison great stock are not susceptible, for cattle do exceptionally well in the district in question. Unfortunately no experiments with ticks were made, but I hope shortly to be able to collect some and to send them to Dr. Theiler.

The second disease I bring to your notice is one which has caused me a considerable amount of worry, in that I failed to recognise it as a separate disease owing to it being masked by another. For a long time I mistook certain of its ever present symptoms for Blaauwtong sequelae, and this led me astray with regard to the efficacy of the Bluetongue virus introduced by Dr. Theiler, led me to conclude that the virus did not produce the high percentage of immunity claimed for it, and rendered a great part of my bluetong inoculation records valueless. The presence of another disease was first suspected by Dr. Theiler, owing to the fact that certain blood which I sent him from sheep which were supposed to be suffering from Bluetong, when inoculated into susceptible sheep failed to produce Bluetong or in fact to produce a reaction at all. By this time the Bluetongue season was over, and the symptoms peculiar to the disease stood out sharply defined from the Bluetongue symptoms with which they had been confused. In this disease as in Schielyke Ziekte there are few, if any premonitory symptoms. Every animal attacked appears to die and the first intimation that anything is wrong is that the animal is found dead. The animal attacked may be fit for the butcher, in fact the animals which are attacked are often the best conditioned in the flock ; externally there is nothing abnormal, but internally there are certain well-marked symptoms which are ever present. The pericardium always contains a large quantity of fluid which is invariably deeply blood stained and never clear and limpid as in the disease previously described : the epicard has large well-defined petechiæ of a peculiar carmine colour, or the shade known as crimson lake, in some instances as large as a maple pea. This splashing or dappling being carried in a number of cases for some distance along the large blood vessels : the lungs present quite a characteristic lesion, being evenly engorged with blood, not inflamed and not even congested in the ordinary acceptance of the word ; engorged is perhaps the better term. They are a bright red in colour, and when cut across the fluid blood runs freely. The stomachs with the exception of the fourth are normal, the latter being usually slightly inflamed, while the blood vessels of the bowel are often engorged, but otherwise normal. This also applies to the spleen, but the liver is almost always affected, in most cases congested and swollen, and when cut into, the blood gushes out freely ; in many cases, however, it is yellow or clay coloured, friable, and its substance easily broken down. These cases however have probably suffered from Blaauwtong or other diseases and recovered, the kidney lesion is however the most marked and the most interesting. In a few cases, when stripped it retains its form, the surface being blotched with haemorrhagic patches, but in the majority of cases all form had gone, the structure of the kidney is broken down, and it is of the consistency of strawberry jam, whilst in the few cases the haemorrhage had been so great that large blood clots were found. Most of the tissues of the body, including the fat, will be found to be blood-stained, due to extravasation, and the pleural and abdominal cavities also contain a variable amount of blood-stained fluid. Very little experimental work has been done, blood injected into sheep believed to be susceptible gave no reaction, microscopic examination of blood gives a negative result, whilst it is not possible to try any medical treatment as the animal is never observed to be sick.

So we have here two diseases, causing a heavy mortality, two diseases which it is our duty as a profession to elucidate, and which I now ask you to discuss. I know that you will have learned little from this paper, but it

will serve the purpose of opening up the subject, and I trust that you will all give us the result of your experiences and observations freely so that a good discussion may arise.

THOMAS H. DALE.

Mr. DUNPHY proposed that the discussion be postponed. Mr. Kellett seconded.

Mr. CHRISTY proposed the paper be printed, and that the Secretary be instructed to that effect. Mr. May seconded.

Mr. RUNCIMAN on being requested by the Secretary, agreed to read a communication on a case of neurectomy.

13. There were no microscopical or pathological specimens.

The PRESIDENT declared the meeting closed.

JAMES CHALMERS, *Hon. Sec.*

REPORT OF THE VETERINARY SURGEON TO THE CORPORATION OF THE CITY OF GLASGOW, 1906.

By A. M. TROTTER.

In submitting for your consideration the Report of the work done by this department during the year 1906, I desire to take the opportunity of referring to some points of special interest.

Last year I directed attention to the unsatisfactory conditions under which much of the pork imported into this city from other parts of Scotland and from Ireland is prepared for human food. It was pointed out that at no time was this pork examined to determine as to its fitness for human food, and the assertion has not been disputed. Nevertheless, the conditions under which it is prepared are still as unsatisfactory as ever. Many instances could be adduced in support af this contention. The following is one which has come under my notice during the period under review :—A side of pork ribs, consigned by a large ham-curer in Ayrshire to a trader in this city, was found to be extensively affected with tuberculosis. On enquiry it was ascertained that the consigner slaughtered, on the average, some 500 pigs per week, and it was admitted that the carcases cured by this consigner were never examined. All the circumstances under which this side of pork ribs had been consigned to Glasgow, on being submitted to the members of the Sub-Committee on Meat and Fish Inspection, were considered of sufficient interest to warrant their being forwarded to the Local Government Board for Scotland for their information and consideration. The pig from which this side of ribs was taken must have been extensively affected with tuberculosis, in view of which it is disturbing to know that the animal's flesh was cured and sold without let or hindrance for human food.

I have on several occasions also pointed out that there is no control over the wholesomeness of Irish pork placed on the Glasgow market. The pigs in Ireland are slaughtered on the premises of the feeder. The carcases are then conveyed to the adjacent market, and purchased by agents of large ham-curing firms, by whom they are boned out, and, after manipulation, consigned to ham-curers in Glasgow and elsewhere in the West of Scotland. On arrival in Scotland their condition thus renders impossible any inspection as to their wholesomeness for human food, nor have they at any time during their conversion from the living animal to a food commodity been inspected to ascertain their fitness for such a purpose.

Some interesting information was elicited from witnesses under cross-examination in one of the Irish courts recently. It was asserted that all pigs sold in country markets in the North of Ireland were passed by a market official called the "trier," whose duty is to pass under review all carcases offered for sale, and determine their condition of freshness and freedom from blemish due to injury ; but the trier does not use a knife during the process, or make any examination to determine as to the existence of tuberculosis or any other disease. Indeed, the ham-curers and pork merchants among the witnesses referred to professed ignorance of tuberculosis. They stated they had never seen it, but when it was pointed out to them in the carcases under litigation they acknowledged that they had observed similar appearances in others, and several admitted that since then it had been their practice to cut out all parts so affected. It is well known that Irish pigs are frequently found, on post-mortem examination, to be affected with tuberculosis, and the experience gained in the Glasgow abattoirs, where large numbers of pigs imported from Ireland are slaughtered, affords irrefutable testimony to the fact, in view of which it is appalling to find, from the statements made by the pork merchants themselves, that they do nothing to ascertain whether the pork cured by them is fit for human food.

This unsatisfactory position has been more than once pointed out to the Local Government Board for Scotland, but all efforts to have this pork inspected efficiently from a food point of view have proved fruitless. A large quantity of this uninspected meat– a considerable part of which is, doubtless, diseased and unfit for human food—is consigned to traders in this city in such a condition as to render it impossible for an inspector to express an opinion as to its wholesomeness.

It is surprising that the authorities have been so indifferent to the recommendations of the Royal Commission on Tuberculosis, more especially when the Commisioners, after grave deliberation, reported so strongly as to the danger arising from the consumption of pork affected with tuberculosis. In their report the Commissioners state—"In view of the greater tendency to generalisation of tuberculosis in the pig, we consider that the presence of tubercular deposit in any degree should involve seizure of the whole carcase and of the organs.

It is of the utmost importance that a uniform system of meat inspection be established throughout the country. It is quite a reasonable demand to make—that the flesh of an animal diseased to such an extent as to warrant seizure be destroyed, no matter where the animal has been slaughtered. It is common knowledge that at the present time there are traders deliberately dealing in an inferior class of animals, conveying them to slaughter-houses where the system of inspection is either *nil* or very lax. This is a direct menace to the public health, and could to a great extent be remedied by the promotion of a uniform system of meat inspection. In Scotland this could be instituted with little delay or trouble. In many countries it has already been established, the control in every instance being exercised by veterinarians.

TUBERCULOSIS.

Following the precedent of former years, I herewith submit tables showing the prevalence of tuberculosis among animals reared (*a*) in this country, and (*b*) those landed at the Foreign Animals Wharf, as also the measures taken with the carcases affected :

ANTHRAX.

During the year three cases of anthrax were discovered in the city. The cases in question had their origin respectively in Dumbartonshire, Lanarkshire, and Renfrewshire. These animals had either died or been slaughtered *in extremis*, and brought to the city abattoirs as undressed carcases.

GLANDERS.

During the year four hoeses were brought to the horse slaughter-house, on post-mortem examination, were found to be suffering from glanders. Those cases were at once reported to Prof. M'Call, Veterinary Inspector to the Local Authority under the Diseases of Animals Act, 1894, who corroborated this diagnosis, and took the necessary preventive measures.

(*a*) HOME ANIMALS.

Slaughtered.		TUBERCULAR. Affected.		Carcases totally destroyed.		Carcases partially destroyed.		Carcases passed.	
	No.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.
Cattle,	43,895	8766	19·97	1268	14·46	896	10·22	6602	75·31
Calves,	4,087	27	0·66	17	62·96	2	7·40	8	29·62
Swine,	45,456	3092	6·80	97	3·13	10	0·32	2985	96·53
Sheep,	254,635	1	0·0003	1	100·00	...	...	...	...
Goats,	26	...	...	...	...	...	...	...	...

(*b*) FOREIGN ANIMALS.

Slaughtered.		TUBERCULAR. Affected.		Carcases totally destroyed		Carcases partially destroyed.		Carcases passed.	
	No.	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.
Cattle,	50,641	615	1·21	3	0·48	27	4.39	585	95·12
Sheep,	5,222	...	...	...	...	...	...	...	...

TABLE SHOWING ANIMALS DESTROYED AS UNFIT FOR HUMAN FOOD IN GLASGOW DURING 1906.

	CATTLE. Oxen.	Bulls.	Cows.	Heifers.	Calves.	TOTAL.	Swine.	Sheep.	Goats.	TOTAL.
Tuberculosis	37	29	1182	23	17	1288	97	1	...	1386
" Partial	71	83	754	15	2	925	10	...	...	935
Actinomycosis, "	1	1	...	...	...	2	...	...	...	2
* Malignant Diseases	3	1	37	...	...	41	1	2	...	44
" " Partial	...	...	6	...	...	6	1	...	...	7
Anthrax ...	...	...	2	1	...	3	...	...	...	3
Black Quarter	...	1	...	...	1	2	1	1	...	4
Pyæmia ...	...	...	3	...	1	4	...	1	...	5
Septicæmia ...	...	...	4	...	...	4	1	...	...	5
Jaundice ...	...	...	...	...	...	...	1	...	...	1
Peritonitis ...	4	1	8	...	...	13	4	8	...	25
" Partial	6	3	17	...	...	26	2	12	...	40
Chronic Peritonitis, Partial	...	...	3	...	...	3	...	1	...	4
Gastro-Enteritis	2	...	5	...	1	8	...	...	...	8
Enteritis ...	...	...	5	...	...	5	...	...	...	5
Pneumo-Enteritis	...	...	...	...	...	...	20	...	...	20
Pneumonia ...	1	...	11	...	...	12	8	2	...	22
Pleurisy ...	...	...	8	1	2	11	...	2	...	13
" Partial	3	3	9	1	...	16	1	17	...	34
Disseminated Necrosis	...	...	1	...	...	1	...	...	...	1
Nephritis ...	...	...	3	...	...	3	...	...	...	3
Metritis ...	...	...	2	...	...	2	...	...	...	2
Pericarditis ...	...	...	4	...	1	5	...	...	...	5
" Partial	...	...	1	...	...	1	...	...	...	1
Abscesses ...	...	...	6	...	...	6	2	1	...	9
" Partial	9	4	14	...	...	27	7	15	...	49
Dropsical ...	5	3	206	...	14	228	8	131	1	368
Melanosis ...	1	...	...	...	...	1	...	...	...	1
Follicular Mange	...	...	...	...	...	...	1	...	...	1
Bursitis, Partial	...	...	1	...	...	1	...	...	...	1
Injured ...	1	...	58	1	...	60	1	10	...	71
" Partial	19	7	89	3	1	119	20	15	...	154
Maggots, Partial	...	...	...	...	...	...	...	1	...	1
Gangrene ...	3	...	3	1	...	7	...	...	...	7
" Partial	...	...	1	...	...	...	...	...	...	1
Rheumatism ...	...	...	1	...	...	1	...	...	...	1
Decomposition	18	10	145	2	16	191	38	201	1	431
Stillborn ...	...	...	...	...	1	1	...	...	...	1
	184	146	2589	48	57	3024	224	421	2	3671

Total Slaughtered—269,287

* Under "Malignant Diseases" are included Carcinoma, Sarcoma, Granuloma, etc.

DISEASES OF ANIMALS ACTS 1894 TO 1903. SUMMARY OF RETURNS.

Period.		Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies. Cases Confirmed.		Sheep Scab.	Swine Fever	
		Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Dogs.	Other	Out-breaks	Out-breaks.	Slaughtered *
GT. BRITAIN. Week ended Jan. 4		26	33			11	44			54	49	181
Corresponding week in	1907 ..	14	21			9	21			27	45	218
	1906 ..	17	19			23	37			20	16	60
	1905 .	28	63			27	40			69	15	44
Board of Agriculture and Fisheries, Jan. 7 1908												
IRELAND. Week ended Dec. 28		..	..	..	..	..	..	..	..	30	5	10
Corresponding Week in	1906 ..	..	..	..	..	..	..	..	..	9	..	..
	1905 ..	..	..	..	..	1	6	..	..	20	..	..
	1904 ..	..	..	..	..	..	..	..	..	17	1	10
Total for 52 weeks, 1907		3	5	..	..	6	11	..	..	326	161	2789
Corresponding period in	1906 ..	4	8	..	..	8	16	..	..	254	95	1103
	1905 ..	4	6	..	..	31	107	..	..	339	127	1416
	1904 ..	4	7	..	..	11	34	..	..	463	301	4144

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Jan. 2, 1908.

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

THE VALUE OF MILK RECORDS.

The third of the Glasgow Society lectures for the present season was delivered by Mr. John Speir, Newton, Glasgow, on Wednesday evening, December 18th, the subject being "Milk Records; What they have done, and what they may do."

Mr. Speir said he was one of those who believed that in the Ayrshire cow they had one of the best cows in the world for the cheap production of milk. That would be questioned by fanciers of other breeds, but for hardiness of constitution, and production of milk, butter, and cheese, compared with the food consumed, the Ayrshire would be very difficult to beat. Some of their extreme showyard friends said that they did not want their best cows to give too much milk, as such very soon gave the udder a broken-down appearance. Like the razors that were made to sell, not to shave, these cows were bred to sell, and not to give milk.

Among dairy cattle there was no characteristic so strongly hereditary as that of the ability to produce milk. Some families had it developed in an extraordinary degree, while in others the tendency was very feeble indeed. A good example of what a cow could be bred to do, was found in the unpedigreed shorthorn cow Daisy, No. 37 at the recent Dairy Show in London. This cow had quite a good back and body, but her udder was not at all up to showyard ideas. In the inspection class she was placed third, and in the milking trials first. This cow was seven years old, and had calved in August, and six weeks afterwards she gave, roughly speaking, six gallons of milk in twenty-four hours. This milk contained 5·84 per cent. of fat in the morning and 6·9 per cent. in the evening, and from it was produced a trifle over 4lb. of butter. The peculiarity of this cow was that she gave as much milk as the best of the Holland cows, while at the same time it was as rich in fat as that of a Jersey.

OTHER NOTABLE COWS.

Another notable animal was the Freisian cow Boutsje, belonging to the Guelph Agricultural College. This cow completed her year last month, when it was found that the total yield for 365 days was 20,778 lb. of milk, of 3·5 per cent. of fat, which equalled a yield of 781·9 lb. of butter-fat, and at a sixth extra for butter, gave 912·2 lb. She gave 96 lb. of milk in twenty-four hours when at her maximum yield. Another instance was that of one of the red cows of Denmark, which for fifteen years had had an average yield of 1,400 gallons of milk per annum. This was something over 6 tons of milk a year. This cow gave milk of fair average quality, and several of her daughters seemed as if they would equal—if not excel—their mother's yield. Without testing, the value of these cows as milk producers would never have been known, although each was as good as three ordinary cows. There were few herds but what had some good cows, but in most there were others which never paid for their keep. The only way to find out whether a cow was a profitable one or not was to keep a regular account of what she produced, and what it cost to keep her. This could most economically be done by means of Milk Record Societies, such as he was there to advocate.

He would give them a case in point. In the Gaupen Milk Record Society for twelve herds, each 1lb. of butter which was produced during the first year of its existence cost 8d. per pound for food alone, while now it was produced for between 4½d and 4¾d. Milk records enabled the breeder who read them aright to increase his profit in two ways—(1) By increasing his production; (2) by decreasing his expenses. Let them see what had been done in increasing production in well-authenticated instances, and how far this had been contributed to by the force of heredity. When the late Mr. Tisdale of Holland Park began farming, he bought twelve of the best heifers he could find, and he bred from the best of these for twenty-five years, during which period each cow's milk was regularly weighed all their time. His average for the best twelve heifers in his possession during his occupancy of Holland Park was as follows:—For the first year, 450 gallons; for the tenth year, 600 gallons; for the twentieth year, 868 gallons. Lord Rayleigh, the eminent scientist, had had a large number of

farms in Essex in his own hands for from fifteen to twenty years. Under his brother's superintendence these had all been managed as dairy farms. The cows were all bought in at first, and many were found to yield under 400 gallons. The minimum set was 600 gallons, and cows not coming up to that standard were disposed of. Each cow's milk was weighed one day per week. The best cows were bred from, and all the farms now reared their own stock. For some years the minimum had been 700 gallons, and after this year it was to be 800 gallons. One cow, named Captive, gave 1,700 gallons for several years; another, Rachael 2nd, gave 1,000 gallons for many years. John Evens, Burton, Lincoln, who received the first prize for the best managed farm in the show district of the Royal Agricultural Society for this year, began to weigh the milk of each cow in March, 1885, and had continued to do so twice daily ever since. He sold his milk in Lincoln. In 1890 and 1891 the average number of cows in milk was 33, which had an average yield of 729 gallons for these years. For 1904 and 1905 he had an average of 48 cows, which gave 828 gallons; but if the same number was taken at the end as at the beginning—viz., 33—he had in 1905 33 cows which gave an average of 923½ gallons. He had no information as to what the average yield of his cows was in 1885, but after five years weeding it was 729 gallons, while sixteen years afterwards it was 124½ gallons more. In 1905 three cows averaged 1,286 gallons of milk.

The Burton Herd.

In 1905 there were 15 heifers in the Burton herd, which ranged in yield from 515 to 811 gallons of milk after the first calf, the period in milk generally extending from 280 to 290 days. In this year, in this herd of 15 heifers there were—

2	which gave over	800	gallons.
5	which gave between	700 and 800	,,
5	,, ,,	600 and 700	,,
3	,, ,,	500 and 600	,,

Mr. Evens had a cow, Beauty, which after her third calf gave 2,051 gallons of milk in 81 weeks, and after her fourth calf 1,622 gallons in 52 weeks. A bull out of this cow was sire of 16 heifers, all of which, after their first calf, yielded from 600 to 965 gallons of milk, and after their second and third calves from 700 to 1,030 gallons per annum. Beauty 2nd, out of this cow, yielded 1,234 gallons of milk after her first calf. Another cow, named Burton Profit, for three calves averaged 1,462 gallons, and gave an average of 1,100 gallons per annum for seven years. Another cow, Burton Margaret, calved in 1896, gave, at the Tring milking trials, 75 lb. of milk in twenty-four hours, which is the record for that show, which is the largest of its kind in England. This cow, after her fourth calf, gave 1,534 gallons, and after her fifth calf 1,258 gallons. Burton Vic. 2nd, calved in 1898, gave the following yields of milk—After her first calf, 609gallons; after her second calf, 907 gallons; after her third calf, 1,171 gallons; after her fourth calf, 1,246 gallons. Young Cherry, after her first calf, gave 1,042 gallons, and after her second one, 1,446 gallons. With many others, Mr. Evans believes that in breeding for milk "the bull is half the herd," and that unless bulls are selected from heavy milking cows, which have been mated with bulls of a similar class, little success need be expected in breeding.

The Effect of Heredity.

Having quoted the results obtained by Mr. Marshall, Riding Mill, Newcastle, who it was stated had regularly weighed the milk of each of his cows for a very long period, Mr. Speir referred to the question of heredity in cows. In the Newton Rigg herd at Penrith, belonging to the Cumberland and Westmorland County Council, two pedigree bulls were used in succession. One of these was Crown Prince Hanson, which was a good animal, and was ultimately sold at a big price to go to the Argentine. His offspring were good-looking heifers, but the one-half were utter failures as milkers, while none of the others were as good as their dams. The other bull was Major Moss, from the Underley herd, out of a cow which had a good milk record for several years. Without exception, Mr. Lawrence wrote that almost every heifer begotten by him became an excellent milker. Four of the cows served by the first bull had heifer calves, and when served by the second one had heifers also. All the first heifers gave excessively small yields of milk—so small, in fact, that most of them were fattened and sold; yet their half-sisters sired by Major Moss gave good yields. The effect of the use of the first of these two bulls on this herd was identical with what had happened in thousands of instances among Ayrshire breeders, but, instead of the damage being limited to one year, as in the Newton Rigg herd, it had often extended to two or three, and sometimes to four years. Many and many a time had he heard a breeder say that the use of such and such a bull spoiled his herd for years. For milking purposes, the worth or worthlessness of a bull was only proved three or four years after he had been introduced into the herd, and before that damage might have been done which it might take years of patient toil to repair. Such an experience Mr. Marshall, Riding Mill, was now having. Four years ago a grand pedigree cow in one of the classes of the London Dairy Show, in October was giving a large quantity of milk, although due to calve to a pedigree bull in the April following. Mr. Marshall bought the calf at a big price, and thought he was all right. He served several of his best cows with this bull up till he was two and a half years old, when he was sold at a high price to go to the Argentine. His offspring are presently coming into milk, and, although all are beautiful animals, they are proving disappointing milkers. Seeing how the offspring of this bull were turning out, he made inquiry regarding his sire, and found that he was off a family which had been bred for generations for beef instead of for milk, and that his prepotency in that direction was greater than that of the dam in the production of milk. The result here, as in every other case, was that the bull was spoiled for getting stock able to produce a good yield of milk, and that heifers from him were in great part failures so far as milk production was concerned.

Experiences in Holland.

Recently, when in Holland, he met some of the breeders who had been most identified with the milk records in that country. Mr. Kuperus, a tenant farmer, renting 105 acres of heavy clay land, had on his farm 35 cows and heifers, besides young stock, and these included 26 cows which in 1906 gave an average of 1,044 gallons of 10 lb. of milk of 3·52 per cent. butter fat, and he expected that this year the average for his cows would be fully more than that. One cow in his herd yielded 1,865 gallons of milk in 329 days, and another, 615 lb. butter in 317 days. In this herd testing began in 1897, when the average for cows and heifers was 923 gallons of milk, of 3·15 per cent. fat, for 287 days in milk. In 1905 the average had increased to 1,100 gallons of 3·52 per cent. of fat, for a milking period of 332 days.

A farmer in Canada began in 1891 with 8 cows, and now has 25. He weighs the milk of each cow twice daily, and tests it for fat periodically. By simply selling his poorest milkers and breeding from the best, he has the following returns per cow:—

Year.	No. of cows.	Average return per cow.
1891	8	£9 14 0
1893	10	12 3 0
1897	15	10 12 0
1900	18	12 15 0
1903	23	19 10 0
1906	25	16 10 0

Another example on a more extended scale than that of a single farm was that of the Milk Record Society of Vallakra. During the first year of its existence the average per cent. of fat in the milk was 3·09, while in its sixth year the average had increased to 3·21 per cent. of fat, notwithstanding that the quantity of milk was 31 per cent. greater than it was six years previously. Some said that this was all very well, but in their opinion a moderate milking cow might be just as profitable as a heavy milking one, as, in addition to the extra food consumed, the depreciation of the cow was likely to be greater. In a district where he was giving a lecture on this subject a few years ago, a well-known farmer said that he could not understand how one cow could produce more butter than another (he was a butter maker) without eating a corresponding greater quantity of food, as butter, any more than anything else, could not be produced out of nothing. He was not prepared to say how it occurred, but most people who kept cows knew that, feed them as uniformly as they liked, there would be great differences in their yield of milk and butter. Food was a necessity of life, but it was not everything. Milk could not be produced without food, but food alone was of little value when given to half dry cows, as those who attempted to produce milk by extra food from such animals would find to their cost. These were the class of cows in Canada called steer cows, of which, unfortunately, most countries had too many. From 1898 to 1903 Dr. Woll, of the Agricultural College of Wisconsin, the greatest authority of the present day on dairy matters, caused every separate article of food to be weighed which was given to each of the college herds, of from 35 to 38 cows, during that period. The milk all was also weighed and analysed. The herd was composed of selected specimens of each of the three or four principal dairy breeds. The results showed that, while one cow yielded butter of the annual value of £20 after payment had been made for all her food, the others dropped gradually down till one actually produced £1 less value in butter than had been the cost of food alone consumed by her during that year. In the other two years during which this cow was tested, she gave a small profit. These results were the most complete of anything ever attempted in this direction, and conclusively proved that pedigree was of far greater importance than food in the production of milk or butter.

Influence of Food.

It had also been argued that the large yield of some herds compared with others was entirely the result of extra feeding. Estimates of the foods used in the herds of the Milk Record Societies since this work began in Scotland clearly showed that the heaviest milking herds, at least during the winter months, when the food was under control, were not those which consumed most of it. In the spring months a good milking herd would produce a gallon of milk at and expenditure of food of all kinds of from 3d. to 4d. per gallon, while an indifferent one would require from 5d. to 6d. What was true of the herds became more pronounced in the individual cows, and the milk records showed a considerable number of animals which had never paid for the food they had consumed. Cows to give records such as those he had referred to, could not be made by any system of feeding; and extra food, while it might improve a poor one, would never turn it into even a moderately good one. There was not the shadow of a doubt as to the superiority of the milk record method of selecting cows over the inspection one, as had been abundantly proved by its success wherever given a reasonable trial. One argument against it was that the good cows of one year were not always those of the next, and that good milking cows had not always good milking daughters. Both statements had some truth in them, but it was very little. In one herd embraced in the milk records of 1903 the three best cows were also the three best the following year, while the two poorest milkers in each year were the same animals. On another farm, out of the six best animals in 1903, five of them were among the six best in 1904, whilst the sixth one had been sold. In this instance, also, the two cows which were worst in 1903 were also worst in 1904.—*The North British Agriculturist.*

EXPERIMENTS WITH THE MILK OF NEWLY CALVED COWS.

Prof. Douglas A. Gilchrist, M.Sc..

During the past summer experiments with the milk of newly-calved cows have been made at Offerton Hall, the Dairy Research Station for County Durham, which is controlled by Armstrong College, Newcastle-upon-Tyne. The main object has been to ascertain the period after calving at which the milk of newly-calved cows may be sold as normal milk. This work has been done at the request of the Board of Agriculture in connection with a question arising out of a prosecution for milk adulteration, the point being whether the liquid known as colostrum could properly be sold as milk. (See *Journal*, vol. xiii, July, 1906, p. 249.)

Colostrum and "biestings" are the names usually given to the milk of newly-calved cows. Colostrum has a rich yellow colour and is considerably more viscid than ordinary milk. It is easily coagulated by heat, owing to the large amount of albumen it contains. Only a small amount of albumen is present in milk. Occasionally the colostrum is reddish in colour owing to the presence of blood.

Samples of the milk of newly-calved cows were collected by Mr. J. McLaren, junr., the superintendent of the station, and forwarded to Mr. S. H. Collins, M.Sc., F.C.S., Lecturer in Agricultural Chemistry at Armstrong College. The results of Mr. Collins' analyses of these milks are given in the tables below.

Cow No. 1.—Calved 7th May, 1907.

	First Day.		
	Morning. Per cent.	Noon. Per cent.	Evening. Per cent.
Water	78·46	79·46	79·76
Total solids	21·54	20·54	20·24
Albumen & casein	14·85	13·05	10·37
Milk sugar	1·81	2·37	2·80
Ash	1·13	1·16	1·24
Nitrogen	2·33	2·05	1·63
Specific gravity	1·0635	1·0577	1·049

The foregoing figures give a good idea of the composition of colostrum for the first whole day after calving. On the average, normal milk contains about the following:—Water, 87 per cent.; casein, 3 per cent.; albumen, ·4 per cent.; milk sugar, 4·75 per cent.; fat, 3·6 per cent.; and ash, ·75 per cent. The average specific gravity of milk is 1·032. In all Mr. Collins' results the fat was very irregular and the results with this constituent were worthless to further the objects of this enquiry. The high total amount of albumen and casein is entirely due to abnormal albumen, while milk sugar is considerably under, and ash considerably over the average.

In the following cases the determinations were continued until the sixth or seventh days after calving. The mixed milk is a mixed sample of the two or three milkings of one day. The following contractions are used: M., morning; N., noon; E., evening:—

Cow No. 2.—Calved May 20, 1907.

—	First Day. M.	First Day. N.	First Day. E.	2nd Day. Mixed.	3rd Day. Mixed.	4th Day. Mixed.	5th Day. Mixed.	6th Day. Mixed.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent
Water	77·7	82·32	83·68	—	—	—	—	—
Total solids	22·30	17·68	16·32	—	—	—	—	—
Albumen & casein	17·50	12·14	10·34	7·40	5·87	5·23	4·53	4·27
Milk sugar	1·64	3·22	3·81	3·75	4·40	4·87	4·25	4·28
Ash	0·48	0·96	0·68	—	—	—	—	—
Nitrogen	2·78	1·90	1·62	1·16	0·92	0·82	0·71	0·67
Specific gravity	1·0682	1·0553	1·0523	1·0470	1·0397	1·0384	1·0385	1·0375

Cow No. 3.—Calved May 20, 1907.

	First Day. E.	Second Day. M.	Second Day. E.	3rd Day. Mixed.	4th Day. Mixed.	5th Day. Mixed.	6th Day Mixed.	7th Day. Mixed.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Water	73·48	80·06	82·40	—	—	—	—	—
Total solids	26·52	19·94	17·52	—	—	—	—	—
Albumen & casein	17·41	11·98	8·36	6·25	5·10	4·98	4·27	4·21
Milk sugar	1·76	2·30	3·20	3·57	2·69	4·03	3·50	3·87
Ash	0·86	0·68	0·90	—	—	—	—	—
Nitrogen	2·73	1·87	1·31	0·98	0·80	0·78	0·67	0·66
Specific gravity	1·0615	1·0470	1·0402	1·0368	1·0323	1·0328	1·0332	1·0335

From the foregoing figures it will be seen that in the first milk taken after calving the percentage of albumen and casein varies from about 15 to about 23 per cent., by far the larger amount of this being albumen. These soon become reduced in quantity. On the fourth day they are on the average only a little under 1 per cent. over the seventh day. Another constituent—milk sugar—was present in the first of all the milkings to less than half the normal amount, being considerably under 2 per cent. This had increased to the normal, however, in all cases but one after the third day. The specific gravity was in all cases abnormally high in the first milkings, but by the end of the third day this comes within the limits of normal milk. The ash constituents vary considerably at first, but they also soon become normal.

The casein and albumen are 12 per cent. above the normal on the first day, and on the third day are only 2½ per cent. above the normal. The latter would be even less if all the cows had calved on the morning of the first day. The milk sugar also has practically reached the normal on the third day. There are certain characteristics of the milk of newly-calved cows which do not disappear for a few weeks, but these affect the milk to a very slight extent and do not interfere with its use for all practical purposes.

It may fairly be assumed, as a result of these and other investigations, that the milk of newly-calved cows may be used for all ordinary purposes at the end of three complete days from calving, provided the milk is then free from blood and is apparently normal.

The popular opinion that "colostrum" or "biestings" is unwholesome is quite an erroneous one. Excellent "biestings" cheeses have been for long and are still made in some of our rural districts, the simple heating of this milk being sufficient to coagulate it into a cheesy condition. These cheeses will keep for a short time only. These, as well as various puddings prepared from this milk, are nutritious and palatable. It should not be so used, however, if the milk is at all tinged with blood. —*Journal of the Board of Agriculture.*

TUBERCULOSIS AND THE MILK SUPPLY IN BIRMINGHAM.

A Special Report by the Medical Officer of Health and the Veterinary Superintendent, 1907.

By our local Act of 1903 powers were obtained which it was hoped would demonstrate the extent to which the milk supply contained the infection of tuberculosis, and which at the same time would give some means of excluding this infection from the supply.

In popular language, the 1903 Act gave the following powers:—

1. Any person who knowingly sells milk from a cow suffering from tuberculosis of the udder is liable to a penalty.

No case has occurred which could be brought under these conditions; indeed, it is not often that such a case can be proved.

2. Any person who, after becoming aware of the fact that one of his cows is suffering from tuberculosis of the udder, permits such cow to remain in any field, shed, etc., along with other cows in milk, is liable to a penalty.

Here again no instance of offence has come to light, and it may be said that as a general rule an offence under this clause will be difficult to prove.

Proof will in each case have to be forthcoming that the cowkeeper knew of the tubercular condition, and further that the contact took place—not an easy matter for the Birmingham officers when dealing with country cowsheds. In those cases of the kind which have been detected the dairy farmers presumably were unaware of the actual condition until it was pointed out to them by the Corporation officers. In none of the cases did any farmer take steps to find out the real condition of the affected udder, but as soon as informed of the nature of the affection, each at once complied with the requirements of this clause, although none seemed fully to appreciate the necessity for segregation.

3. Any person who supplies milk in the city, and who fails to notify that a cow is suffering from, or is suspected of, or exhibits signs of, tuberculosis of the udder is liable to a penalty of £2.

Although the Act has been extensively advertised—direct notices having on two or three occasions been sent to all farmers and others sending in milk—yet up to the present time no single case has been notified. There must be hundreds of cows that come within the requirements of this clause.

4. Power is given to take samples of milk in Birmingham for testing purposes. Having obtained information that such milk is infected, power is given to go to the cowsheds inside or outside the City, under guarded conditions, and take further samples from individual cows. When the cow, or cows, are thus proved to be infective, an order may be made prohibiting the sale of any milk from such cowshed, unless the owner takes proper precautions (such as slaughtering) to prevent his milk being infective.

Under this power many samples have been taken, and the results obtained form part of the material of his report.

Each of the powers above-mentioned is most carefully guarded so that in no instance can the farmer or cowkeeper be unjustly treated. Indeed, so much care has been taken that many of the clauses are cumbrous, and can only be put in operation with great difficulty. We enclose herewith a copy of all the powers which we in Birmingham possess in regard to the milk supply.

Immediately on the passing of the Act of 1903, which gave us these additional powers, the Health Committee took into consideration the best means of putting them into operation. For want of accommodation it was found that the necessary work could not be carried out at the Birmingham University at the time. The University authorities, however, stated that they were about to enlarge their buildings, and that ample facilities could be given in the new buildings. It was, therefore, decided to wait.

The first samples of milk were taken on September 13th, 1906, and submitted for examination.

It may be stated here that the collection of the samples and their subsequent examination are highly technical processes. The collection in every case was undertaken by the Assistant Veterinary Surgeon of the Corporation, and the snbsequent examinations were made by Prof. Leith and his staff.

Between Sept. 13th, 1906, and July 31st, 1907, 261 samples were taken. These must be divided into groups, as otherwise overlapping will occur, and too high a percentage of tubercular samples will result.

Group 1.—175 samples were taken from churns at the railway stations, and other places, of milk derived from outside Birmingham.

Group 2.—5 samples were taken from the mixed dairy milk of Birmingham cowkeepers.

Group 3.—81 samples, one a duplicate, were taken from individual cows at cowsheds inside or outside Birmingham. In each case the sample was taken from a cow which was probably affected.

The following is a summary of the results:—

		Tubercular.
Group 1.	Churns at railway station	14 per cent.
Group 2.	Birmingham cowsheds	0 „
Group 3.	Suspected cows	6 „

In the total number of samples the percentage found to be tubercular by Prof. Leith has varied in a manner which is not easy of explanation.

	Mixed milks.	Tubercular.
First	50 samples examined	30 per cent.
Second	50 „	8 „
Third	50 „	6 „
Last	25 „	8 „

Altogether 180 samples of mixed milk have been examined, and of these 24 were found to contain tubercular infection, equalling 13.33 per cent. Wherever a mixed milk has been found to contain tubercular infection a visit has been paid to the farm and samples taken from individual cows. In the cases of these 24 infected milks 74 subsequent samples have been taken from individual cows, and of these 4 were were proved to be tubercular.

The cause of failure in some of the cases may in all probability be due to the inconstant or the intermittent presence of tubercular infection in the milk of individual cows. Sometimes, as is well known, an infective milk is obtained from a tubercular cow whose udder presents no evidence of disease, and it is in these cases particularly that the presence of tubercle bacilli in the milk is liable to be inconstant and vary from day to day. (More rarely a non-infective sample may be given by a cow with udder lesions—the liability to this probably being greatest in the early stages, and when only one quarter is affected. An illustration of milk being returned as non-infective which was secreted by a cow with mammary tuberculosis was furnished by Sample No. 188. On April 29th, 1097, this sample of milk was taken from a cow that had re-acted to the tuberculin test and had clinical tuberculosis of the udder, yet the milk was returned non-infective. The cow was killed two days after the sample was taken and post-mortem examination presented well-marked generalised tuberculosis, including tuberculosis of the udder.)

Another cause of failure in some cases may very probably lie with the source of the infection in some of the mixed milks. In connection with this the research work of Schroeder and Mohler, recorded in Bulletin 88 of the United States Bureau of Animal Industry, and reprinted in Vol. 20 of the Journal of Comparative Pathology, shows that not only the milk secretion, but the excretions of tubercular animals may be prolific sources of tubercular infection. They claim, in fact, that their experiments prove that the digestive tract is the main channel by which tubercle bacilli leave the bodies of tubercular cattle. If this be accepted, no one who has witnessed the milking of cows will question the possibility of tubercle bacilli gaining entrance to milk in cases where there is no mammary tuberculosis. Clearly this probable source of milk infection cannot be disregarded, and since no tubercular animal, whether in milk or not in milk, living in cohabitation with dairy cows can be excluded from being a possible source of danger, the necessity for keeping all tubercular animals apart from the dairy stock is apparent. But in addition to these causes the failure to find the tubercular cow may be due to many other, the chief probably being that, owing to the length of time which has elapsed between the taking of the sample and the visit to the farm, the cowkeeper has removed the infected cow, as possibly it was an unthrifty animal.

The small percentage of tubercular samples in the milk taken from individual cows at the farm will be noted. This is no doubt to be accounted for in some degree by the reasons which have been mentioned as possible causes of failure to find the tubercular cow and which to a certain extent also apply here. But unquestionably one of the chief reasons lies in the special effort made to find the cow. When the inspector visits a farm to take individual samples he knows that the mixed milk has contained tubercular infection, and his experience being that although he brings back two or three samples from the cows in the herd presenting the most suspicious indications of tuberculosis of the udder, none of these may be found infective. As a consequence, and desiring to leave no loophole for escape, he has cast his net wide. From one farm he took samples from five cows out of seven, and in another farm five cows out of twelve, in each case taking samples from every cow pre-

senting any indications that could in any way be regarded as suspicious of tuberculosis ; yet in both these cases, all samples were returned non-infective.

A reference letter was placed opposite the number of the sample of mixed milk found to be tubercular, and the subsequent testing in these cases was as follows :—

A. Sample No. 3. Taken at New Street Station on September 15th. Report received from University October 17th. Visit paid to farm on October 24th, and the following samples taken :—

No. 28	(Unthrifty cow, coughing badly) ...	No tubercle bacilli found.
No. 29	(Off hind quarter hardened) ...	" "
No. 30	(One hardened quarter)	" "
No. 31	(Knotty quarter) ...	" "

D. Sample No. 23. Taken at New Street Station on October 16th. Report from University on November 17th. Visit paid to farm on November 23rd, when the following samples were taken :—

No. 46	(Enlarged lymphatics)	No tubercle bacilli found.
No. 47	" " ...	" "
No. 48	(Indurated quarter) ...	" "
No. 49	(Cow unthrifty) ...	" "
No. 50	(Coughing, unthrifty)	" "

E. and F. Samples Nos. 35 *and* 36 (*same farm*). Taken at New Street Station on November 6th. Report received from University on December 10th. Visit to farm on December 12th, when the following samples were taken :—

No. 57	(One dry quarter) ...	No tubercle bacilli found.
No. 58	(Knotty udder) ...	" "
No. 59	(Indurated quarter) ...	" "
No. 60	" "	Living tubercle bacilli found
No. 61	(Dry quarter)	No tubercle bacilli found
No. 62	(Indurated quarter)	Living tubercle bacilli found

P. Sample No. 103. Taken at New Street Station on February 21st. Report from University on March 21st. Visit to farm on March 27th, when the following samples were taken :—

No. 153.	(Thin, one dry quarter of udder) ...	No tubercle bacilli found.
No. 154	(Unthrifty, enlarged quarter of udder)	" "
No. 155	(Hardened quarters at back of udder) ...	" "
No. 156	(Right hind quarter atrophied and blind	" "

Q. Sample No. 106. Taken at New Street Station on February 21st. Report from University on March 20th. Visit to farm on March 25th, when the following samples were taken :

No. 150	(Blind quarter of udder)	No tubercle bacilli found.
No. 151	(Thin and emaciated)	" "
No. 152	(Very thin) ...	" "

R. Sample No. 107. Taken at New Street Station on February 21st. Report from University on March 20th. Visit to farm March 25th, when the following samples were taken :—

No. 145	(Thin cow and emaciated) ...	No tubercle bacilli found.
No. 146	(Very thin, coughing, left hind teat blind, and quarter dried up	" "
No. 147	(Very thin) ...	" "
No. 148	(Right hind teat blind)	" "
No. 149	(Very thin, knotty udder)	" "

X. Sample No. 254. Taken at Snow Hill Station on July 11th. Report from University on August 8th. Visit to farm on August 13th, when the following samples were taken :—

No. 262	(Induration right hind quarter, acute mastitis left hind quarter	No tubercle bacilli found.
No. 263	(Quarters of udder of unequal size ...	" "
No. 264	(Thin)	" "

The striking facts brought to light by these figures * are that 14 per cent. of the milk coming into Birmingham contains the infection of Tuberculosis.

The cows kept in Birmingham are undoubtedly to a much less extent liable to give infected milk. One can make this statement with some assurance, notwithstanding the fact that relatively few milks have been tested, because we carry out what is probably the best of all safeguards—a monthly inspection of the cows by a veterinary surgeon.

The towns that have been the pioneers in this work are Manchester and Liverpool, and we are indebted to the Medical Officers of these towns, and also of those of Leeds and Sheffield, for statistical information as to the prevalence of Tuberculosis infection in the mixed dairy milk during each year.

The Sanitary Authority of Liverpool has, since 1896, examined 4,697 samples of milk for tubercular infection. During the six years, 1901 to 1906, 2,212 samples of mixed milks have been examined. Of these, 220 samples were of mixed milks from Liverpool cowsheds, and 1,992 of mixed milks from country cowsheds. The proportion of tubercular milks found was —

Mixed milks { Liverpool cows 0·91 per cent.
Country cows 14·5 per cent.

In Manchester the preventive measures against milk infection have been very carefully dealt with. The number of samples tested for each of the years 1901 to 1906 is set out below :—

Year.	No. of Samples of Mixed Milk examined.	Percentage found to be tubercular.
1901	310	8·7
1902	420	8·6
1903	432	10·4
1904	432	6·7
1905	764	6·2
1906	677	6·2
	Total 3,035	Mean yearly 7·8

Sheffield obtained powers in 1900 to enable samples to be taken for examination, and in addition to other samples the following number of examinations of mixed milks have been made :—

Year.	No. of Samples of Mixed Milk examined.	Percentage found to be tubercular.
1902	28	17·8
1903	66	16·6
1904	89	6·7
1905	68	14·7
1906	115	9·5
	Total 366	Mean yearly 13·05

Leeds obtained similar powers in 1901, and the following results have been obtained :—

* We have omitted a number of these "samples" on account of our limited space.—Ed.

Year.	*Samples examined.	Examination incomplete.	Pseudo Tubercular.	Tubercular.
1904	36	1	0	2
1905	166	70	3	7
1906	44	11	1	1
Totals	246	82	4	10

* In the return received it is not stated that each of these samples was of mixed milk.

Excluding the samples which gave an incomplete reaction, and those showing Pseudo Tuberculosis, we have 160 milks among which were found 10 tubercular samples, equalling 6·2 per cent.

Comparing these results, we get the followiug percentages :—

Liverpool		
(Country milks)	14·5	per cent.
(Town milk)	0·91	,,
Manchester	7·8	(mean yearly percentage.)
Sheffield	13·05	,, ,,
Leeds*	6·2	per cent.
Birmingham	14·0	,,

* See note at foot of Leeds table.

Several important questions arise in considering the facts set out. Of these, one of the most important is : Does cows' milk containing the infection of Tuberculosis set up the disease in the human subject ?

Everyone who is familiar with :—

(*a*) The conditions which give rise to the disease,
(*b*) The symptoms and signs of the disease,
(*c*) The gross pathological lesions produced, and
(*d*) The appearance and life history of the germ which gives rise to the disease,

is impressed with the fact that the disease in bovines, if not identical, very nearly resembles that in the human subject.

Prof. Dr. Koch, to whom we owe so much as the discover of the germ of Tuberculosis, clearly laid it down in 1882 that the bovine disease was one and the same as the human disease, and that the bovines were a source of infection to man. On page 230 of his paper in the *Berliner Klinische Wochenschrift* he asserts, "Bovine tuberculosis is identical with human tuberculosis, and is thus a disease transmissible to man. It must, therefore, be treated like other infectious diseases transmissible from animals to human beings."

From the general observations of many expert workers, no real doubt was raised in this country as to the identity of the two diseases, and progress was being made in formulating schemes which will be referred to later, for the prevention of the disease among the cattle in this country.

While this is so, it is only proper to say that Theobald Smith, Frothingham, Dinwiddie, and some others who were studying the subject, dissented from the doctrine of the identity of the two diseases.

(To be continued.)

TREATMENT OF FOALING MARES.

Some little time ago a number of readers of the *Live Stock Journal* were invited to give their opinions as to the treatment and feeding of foaling mares. A number of instructive replies were forthcoming, and these it is intended to publish as the occasion arises.

Signs of Approaching Foaling to be Looked For.

Mr. Houner is of opinion that the signs of approaching foaling to be looked for are : Show of milk, waxing teats, and restlessness.

Messrs. Ross declare that some mares will foal without giving any signs, while others show wax on their teats, and become uneasy and bad to deal with. They advance the theory that, when a mare gets to her time or over it, she should be watched more closely.

Mr. Wm. Dugdale says the signs are :—Udder filled and white wax on teats, which means that mare will foal within twenty-four hours.

Mr. Alex Crow writes :—When the teats are seen to have wax on the ends, it is a question of days. When the milk is white they are kept under close supervision, as it is generally a question of hours. If on looking at mare she feels hot on her skin, or is slightly sweating, I regard it is certain she will foal before many hours.

Mr. A. C. Rogers, on the other hand, states that when wax begins to appear on the teats, foaling will not be long delayed, although some go much longer than others after waxing.

Col. Henriques says :—The signs vary to some extent in mares ; but the main thing to bear in mind is that the act is in normal cases performed without immediate waxing and very rapidly.

Mr. Surfleet says wax appears on the teats twelve hours before the time of foaling.

Mr. Thos. Crompton has acted on the signs of wax coming on the teats and a falling of the muscles of the back.

Messrs. J. and G. Dickinson say :—Udder gradually enlarges ; wax on teats generally forty-eight hours before foaling ; muscles over hindquarters get more flabby.

What Assistance Should be Rendered at Foaling ?

Mr. W. G. Houner says :—None, unless absolutely necessary—then the best man procurable.

Messrs. T. and C. Ross write :—No assistance is given at foaling unless necessary, and then only just assist the mare when she is paining, providing everything is all right.

Mr. W. M. Dugdale says :—See that skin is not over foal's mouth, and dress navel with disinfectant.

Mr. A. Crow says :—In most cases the feet of foal soon show, then one or two men help mare by pulling well downwards towards mare's heels. Should there be much difficulty, a soft rope is passed over feet, and three or four men put on to it. When head and shoulders come the foal is pulled away as quickly as possible, and on no account is the foal allowed to get caught at the hips. Should it stop there a few minutes the passage contracts, and it is certain death to foal. I have seen two lost in that way. To prevent the groom getting beaten should he find a mare foaling on going to her in the night-time—when everyone on the farm is in bed—and requiring immediate assistance, I have a ring securely fixed in each corner of box, to which a small pulley block is fixed ; this immediately gives attendant the power of five or six men, and so enables him to get foal away safely. The pulleys and rope are kept in loft over box. Most of the mares are able to foal themselves, or with a little assistance, but I always try to be ready for any sort of case.

Mr. Rogers is of the opinion that mares are better without any assistance unless really necessary, and in no case should anyone interfere too soon.

Col. Henriques says as little assistance as possible should be rendered. Satisfy yourself that presentation is normal, look to breathing and free nose and mouth of foal, and attend to navel.

Mr. R. Surfleet advises that nature should take its course if the mare is going along all right.

Mr. Guy Carleton is of the opinion that as little assistance as possible is necessary.

Mr. Thos. Crompton declares that no assistance should be given unless absolutely necessary.

Messrs. Dickinson say :—Generally none in the act ; but try to be there before the foal should smother in sark, and cut the navel cord about 6in. off the body if not already broken.

What Should be Done when Presentation is Abnormal?

Mr. A. C. Rogers advises that a veterinary surgeon's services should be obtained at once.

Col. Henriques says:—Send for qualified veterinary surgeon with the greatest speed.

Mr. R. Surfleet says:—Examine and be guided by circumstances.

Mr. T. Crompton says:—When presentation is abnormal I usually try to get it righted as soon as possible, and if unsuccessful I send for the veterinary surgeon.

Messrs. Dickinson say:—"Send for the vet."

Work to be done after Foaling to Mare and Offspring.

Mr. W. G. Houner says:—Cut the cord six or eight inches from the navel with scissors, especially kept clean for the purpose. Paint the cord with tincture of iodine. Repeat this daily if any signs of scour. Give the mare good hay and plenty of cold water. Do not hurry or worry foal. See that it suckles when it is about four hours' old.

Messrs. T. and C. Ross advise that the mare and foal be left lying down for about twenty minutes, and then take the mare a drink of chilled water and a little warm mash.

Mr. Dugdale says:—If anything, sloppy food, oatmeal, water, and bran.

Mr. A. Crow writes: If mare does not get up almost at once, foal is taken in front of her so that she can lick it and "talk" to it—that seems to revive her better than anything. When she gets up and begins to cool, a rug is put on her for a few hours. Foal is rubbed dry with straw wisps.

Col. Henriques says:—Cut navel string if necessary. Tie with tape saturated with carbolic oil, and rub parts with carbolic oil. Dry foal. See that the foal evacuates properly. Give mare warm mash, with a little oats; hot stout if restoration is required. The attendant should never be without a bottle of carbolic oil with saturated tape, and some soft cords and scissors, either by night or day.

Mr. R. Surfleet says:—Give a bran mash and let the mare rest. Dress the navel with carbolised oil.

Mr. Guy Carleton advises the giving of a mash to the mare.

Mr. T. Crompton thinks that nature should take her course with the mare.

Messrs. Dickinson say:—Give mare bran mash, tie navel cord of foal with a piece of string dipped in carbolic oil (about 1in. from body), and administer a tablespoonful or so of castor oil.

Precautions taken to Prevent Joint Evil.

Messrs. T. and C. Ross say:—To prevent joint evil, disinfect navel a few times with Condy's fluid. Another good thing is to always see your box is kept dry and clean for the first week or so after foaling.

Mr. A. Crow writes:—Directly the foal is born, the navel is dressed with strong carbolic oil—one part pure carbolic acid to 10 olive oil—and dressed again in four hours' time, and twice a day after till cord begins to dry up. Should the navel cord be very strong and require cutting, knife is first dipped in the oil dressing. I have the foaling boxes thoroughly whitewashed with hot lime and carbolic, made with a few lime shells put in a bucket of water, and a few ounces Jeye's fluid or carbolic acid—crude; this boils up and is applied hot, care being taken to get it into all the cracks and corners. The floor is done the same way. The boxes are thoroughly cleaned out every day, bedded down, and a shovelful of dry, hot lime sprinkled over straw.

Mr. A. C. Rogers thinks it is necessary to have everything left in connection with the afterbirth removed immediately by a veterinary surgeon, and to keep the mare's bed very clean and sweet.

Col. Henriques says:—Observe scrupulous cleanliness, and the immediate use of disinfectants on hands, scissors, and all articles coming in contact with navel.

Messrs. Dickinson say:—Tie navel cord of foal with a piece of string, dipped in carbolic oil, about 1in. from body.

Aids Adopted to get Foal to Suck.

Messrs. T. and C. Ross advise that: If it is strong and healthy, as a rule, the foal will require no aid, but if weakly and "daft" you must assist it by leading up to mare, and when he gets his nose anywhere near the teats just draw a little milk yourself from her and squirt it on to his nose and mouth, and then entice him to suck by putting one of your fingers in his mouth until you get him to get hold of the teat instead. This often requires a good deal of patience, but, as a rule, you will succeed.

Mr. Houner says:—Gentle handling and patience.

Mr. W. M. Dugdale says:—If necessary, put treacle on the teats.

Mr. A. Crow writes:—When a foal does not suck after it has been on its legs a few times, I give it a push to the mare's side to get in position to suck. Then I get to the mare's other side, get some milk on the hand, and just touch the foal's mouth. It will nibble at the finger, and by withdrawing the hand to the mare's teats the foal follows when the teat is held towards it. With a lot of patience this will almost always succeed. If not, I get a small basin and milk, a pint or so, from mare, and gently push foal's mouth into it, and get it to swallow a few times. I then adopt the same plan again with fingers, and try my best to remember "patience is a virtue." I have never seen a foal started to suck by holding it to it, and trying to make it. Gentle persuasion is far better.

Mr. A. C. Rogers advises that people should keep away from the mare for a time, and allow the foal to suck. If he does not do it voluntary, assist him very gently.

Col. Henriques says:—This can usually be done by milking a little into youngster's mouth. It is a more difficult matter to get mares in some cases to take to their foals. I have adopted this method with success in very bad cases. Attach the foal to attendant by letting it suck a finger in bowl of milk, etc., and if turned into paddock the mare would go off and the foal remain. Its back should now be rubbed with essence of aniseed. After a time the mare is sure to think of her foal and look for it. Wait till she comes; she will smell it all over, and I have never had any difficuty afterwards.

Mr. R. Surfleet advises the drawing of a little milk, and the rubbing of it on the foal's nose.

Mr. Crompton lifts up a weakly foal to the teat.—*Live Stock Journal.*

Veterinary Officers for "The Royal."

The Annual Report for 1907 from the Principal of the Royal Veterinary College has been submitted, and passed for publication in the next volume of the Journal. The Committee had considered the appointment of veterinary inspectors for the Newcastle Show, and they recommended the appointment of Mr. John Malcolm, F.R.C.V.S., as chief Veterinary Inspector, and that he be asked to submit names of veterinary surgeons from whom the other inspectors might be selected. The Honorary Director had undertaken to confer with Mr. Malcolm on the subject. Sir John M'Fadyean brought up a revised copy of the Society's leaflet on "Tuberculosis in Dairy Stock," and the Committee gave instructions for copies of the leaflet as brought up to date to be circulated to the Committee before the next meeting. During the past year the Committee had met eight times and made eight reports.—*Live Stock Journal.*

Prosecution by the R.C.V.S.

At Halesowen Police Court, on Tuesday, Dec. 19th, James Bailey, farrier, Spring Hill, was summoned at the instance of Mr. Bulloek, of the Royal College of Veterinary Surgeons, that he, not being on the Register of veterinary surgeons, and not holding a veterinary certificate, did unlawfully, in giving a certificate on September 15, sign his name on a certificate with the letters V.S. attached, implying that he was a veterinary surgeon.

Mr. J. W. Clulow appeared for the prosecution, and Mr. A. G. Hayes represented the defendant.

Mr. J. W. Clulow said that although the defendant had rendered himself liable by his act to a fine of £20, the prosecutors had no desire for the defendant to be in any way severely punished. His instructions were that in September a valuable horse, belonging to Mr. Pharoah Adams, farmer and butcher, was found maimed, and the injuries were of such a character as to necessitate the defendant being sent for. The police were also communicated with, and the defendant gave a certificate describing the injuries, and attached to his signature were the letters "V.S.," and as the defendant was not justified in law his act constituted an offence.

Supt. H ll gave evidence respecting the receipt of the certificate, which was forwarded to him by Inspector Brazier.

At this point Mr. Hayes raised an objection, urging that the prosecution must prove that the handwriting of the certificate was that of the defendant.

This was over-ruled by the magistrates.

Supt. Hill, proceeding, said the report was sent to him by Inspector Brazier. He had never seen the handwriting in the certificate before.

Replying to Mr. Hayes, the Superintendent said he knew that the defendant was not a veterinary surgeon, and that the document was worthless to him.

Mr. Hayes: You were not deceived by the certificate.

Supt. Hill: No, sir.

Mr. Reay said this was not the point. It was a question whether the man had the right to use the words.

Mr. Hayes said he must submit that the prosecution had to prove the defendant's handwriting.

Inspector Brazier was next called, and upon the first question being put to him by Mr. Clulow, he asked to be allowed to give his evidence in his own way.

Mr. Clulow said the inspector must answer his questions.

Inspector Brazier replied that if he did he might leave some of it out. He was anxious to give his evidence fairly, both for the defendant and the prosecution.

He was asked whether he received the certificate, and replied in the negative.

Mr. Clulow: Did you believe it came from the defendant?

Inspector Brazier: Yes, but from what I have heard since I know it did not.

Mr. Clulow: You were not asked to make that statement, inspector.

Inspector Brazier: I shall give my evidence fairly for prosecution and defendant.

Mr. Clulow: Did you ask him for a statement?

Inspector Brazier: I asked him to give me in writing his opinion as to the injuries of the animal.

Mr. Clulow: And he gave it?

Inspector Brazier: I presumed he did. I considered it my own private property.

Mr. Clulow: Are you defending this man or Mr. Hayes?

Inspector Brazier: I am simply giving fair evidence. Continuing, Inspector Brazier said he served the summons upon the defendant on the 11th inst. When witness spoke to Bailey he said, "Oh, whatever is that for?" Witness told him it was a summon taken out by the Royal College of Veterinary Surgeons for giving him what he did about the horse case. Defendant said, "Oh, what did you make out of that?" Witness told him that he had been summoned, and defendant then said, "My father was a veterinary surgeon for all his life, and I have been doing that work, too. I made nothing out of that. I simply did as you asked me to."

Mr. Hayes: You asked him to write it for your own guidance?—Witness: Yes.

Mr. Hayes: Did you look upon it in the nature of a certificate?—Witness: No, sir.

Mr. Hayes submitted there was no case against his client. Before they convicted him it was the duty of the prosecution to prove that it was the defendant's hand-writing.

Mr. Reay said there could be no doubt that the certificate was given by the defendant. The onus was on the defendant to prove that he was not responsible for the certificate, and also that he was entitled to the letters "V.S."

Defendant gave evidence, and stated that he never professed to be a qualified veterinary surgeon. At the time of the offence he had met with an injury to his thumb, and he was unable to write. He asked Mr. W. S. Hayes to write out the statement for him. He did not authorise him to sign his name, and neither did he tell him to put the letters "V.S." at the end of it.

Mr. Reay: Are you willing to take the responsibity of what was written by Mr. Hayes?—Defendant: No, sir.

Mr. Reay: Then we shall have to consider the advisability of adjourning the case for the presence of Mr. Hayes

In reply to Mr. Clulow, defendant said he did not know the letters were at the end of the name which was signed by Mr. Hayes. He did not inform the inspector that the statement was written by Mr. Hayes.

Mr. Reay said he did not believe that defendant acted wilfully in the matter. He had allowed someone else to write the statement for him, and by so doing he had broken the spirit of the Act.

Mr. Hayes contended that there was no case against his client.

Mr. Reay said he was only suggesting that defendant was guilty of a technical offence. There could be no doubt that defendant was responsible for the statement, even though it was written by someone else.

Mr. Hayes had a short consultation with the defendant, after which he said defendant was willing to accept the suggestion of the Bench. He asked the magistrates to deal with the defendant in a lenient fashion. He simply gave the report for the inspector's guidance, and had no idea that the letters "V.S." were placed by Mr. Hayes at the end of his name.

Defendant was fined 10s. and costs, amounting in all to £1 16s. 6d.—Mr. Reay said the police always tried to be fair, and Bailey had to make up a report to someone. —*The County Express* (Worc. & Staffs).

Australia's Pastoral Wealth.

At the end of 1906 there were in the Commonwealth 1,765,000 horses, 9,350,000 cattle, 83,687,000 sheep, 814,000 pigs. The exports of wool in 1906 amounted to 415,000,000lb. greasy, valued at £17,500,000, and 65,000,000lb. scoured, valued at £5,100,000. Exports of tallow amounted in value to £879,000, of sheepskins to £1,614,000, and of frozen meat to £1,095,000. The butter produced amounted to 160,000,000lb., of which 76,000,000lb. were exported.—*L.S.J.*

Swine Fever Conviction—Appeal Dismissed.

At Norfolk Quarter Sessions on Wednesday, January 1st, before Colonel Hyde (chairman), an appeal case, Learner v. Justices of the South Erpingham Division, was heard.

This was an appeal by Edwin Thomas Learner, farmer, Burgh, against a conviction of the Petty Sessions for the division of South Erpingham, held on the 22nd October, 1907, for having in his possession or under his charge a number of pigs which were affected with swine fever, he having failed to give notice to a constable under the Swine Fever Order, 1894. Mr. Freeman Barrett was for the respondents, and Mr. E. E. Wild represented the appellants.

Mr. Barrett, in outlining the facts of the case said the appellant was convicted upon the hearing before the justices, and mulcted in a penalty of £10, including costs. On the 26th October Mr. Learner lodged an appeal on these grounds, firstly that he was not guilty of the offence, secondly that he gave notice with all practical speed, and thirdly that the decision was against all weight of evidence. So far as the justices were concerned they thought instead of having dealt harshly with Mr. Learner they inflicted a very small penalty. The conditions at the appellant's farm were very bad, one, if not more, pigs being dead, whilst there were several others about in a dying state. The facts were that on the 15th August the appellant, accompanied by another person named Stansfeld, called upon Superintendent Flint who resided in the Aylsham division, and said he had some pigs ill on his farm. The superintendent went to the farm, met the appellant there, and was shown over the premises. He found one pig lying dead against a hay stack, whilst there were other pigs manifestly ill and almost in a dying state. The superintendent at once realised that there must be some infectious disease ravaging the herd. In answer to the superintendent the appellant said the pigs had been ill three or four days. This apparently was not a truthful statement, for on the 22nd of October the appellant said that he had bought the pigs on the 14th July, and that a fortnight after they became ill, and that at last three or four died from some pig disease. This showed appellant was making two statements. When the superintendent saw the dead pig, he told appellant that he must not bury the carcase, as someone would have to come down and make a post-mortem. The appellant then said if he had known there was going to be all that trouble he would have sent the pigs away. Superintendent Flint said that he would have run a serious risk if he had done so; and Mr. Learner remarked, "Well, I would have risked that."

There was living near Leeds, in Yorkshire, a pig dealer named Stansfeld, to whom the appellant had written, to come down and see the pigs. Mr. Stanfeld arrived, and was shown a lot of healthy pigs, but he refused to make a deal because of the price. Mr. Stansfeld was then shown the other pigs, but he would not buy them because they were ill. Appellant did not go to Superintendent Flint until the Yorkshire dealer had refused to buy the pigs. If Mr. Stansfeld had fallen into the trap, if they could call it such, the pigs would have been sent to the distant county of Yorshire, and swine fever would have been started in that great centre, which would have been serious indeed.

On the 15th August Mr. Low, veterinary surgeon, of Norwich, was instructed by the Board of Agriculture to inspect the appellant's premises, and upon doing so he found two pigs dead and seven others manifestly diseased, and in such a condition that he at once said the disease was swine fever. They were lying about the yard suffering from fever and collapse, which were the usual symptoms of the disease. He at once ordered the seven pigs to be destroyed, and afterwards made a post-mortem, when he found that the whole nine pigs were affected with swine fever. The appellant made an admission to Mr. Low that the pigs had been ill a fortnight, although on the previous day he had told Superintendent Flint that they had been ill only four days.

Within the last nine months 69 cases of swine fever had occurred in Norfolk, and the appellant was therefore presumed to be on the alert with regard to the disease, and must have known that swine fever was on his farm when he wrote to the Yorkshire dealer. The 67th Section of the Act clearly set forth that the pig-owner must exercise reasonable intelligence.

Superintendent Flint was called, and bore out in detail the facts as were conveyed in counsel's opening. When he saw the pigs he at once came to the conclusion that some serious disease had struck the pigs. Mr. Learner with his experience must have also known.

Mr. Frederick Low, veterinary surgeon, of Norwich, and an inspector under the Board of Agriculture for the County of Norfolk, also gave evidence. He said that a practical farmer must have recognised from the condition of the pigs that there must have been something seriously wrong with them.

Cross-examined—Witness said that in several cases the skins of the pigs were discoloured. The disease was pronounced in several of the pigs, but in others it was not so manifest.

Mr. Wild on behalf of the appellant, said Mr. Learner was a well known farmer, a large dealer in pigs, and a man of the highest character. Curiously enough he had never in the whole course of his large dealings in pigs had a case or even seen a case of swine fever. That must be taken into account in arriving at the appellant's mental condition with regard to the pigs, as laid down by the law. Mr. Learner in the month of July last year purchased 31 pigs, which were put into the middle yard. On the 14th July appellant purchased another 29 pigs, which were placed in the barn yard. These last all appeared to be perfectly healthy, and for some sixteen days or more showed no sign of disease. They were fed on the sweepings of linseed cake, and on the 2nd August one pig died, and later on two others. Mr. Learner and his steward put the deaths down to the linseed cake feeding, and had not the slightest suspicion that swine fever had struck the pigs. Mr. Stansfeld ultimately came over with a view to buying pigs for fattening purposes. He examined the pigs, both the 31 and the 29, and he was so satisfied with them that he was prepared to buy the pigs there and then. Mr. Learner, however, knowing that four of the pigs had died, would not sell them, but asked Mr. Stansfeld to go with him whilst he reported the matter to the police. That, counsel commented, was not the action of a dishonest man. He (counsel) maintained that even a veterinary surgeon could not speak definitely as to swine fever without a post mortem, and therefore it would not be likely to be detected by a non-professional man. Appellant and his steward had no suspicion of swine fever being prevalent but when four pigs died they thought something was the matter, and appellant to put himself on the safe side reported the matter. If he had desired he could have sold the pigs to Mr. Stansfeld, and as Aylsham and Yorkshire were not infected areas under the Act, the pigs could have been removed without anyone being the wiser. Under the circumstances he asked that the decision of the Justices be reversed, and that the appeal be allowed.

Mr. Learner, the appellant, went into the box and corroborated his counsel's opening. He said he had dealt in thousands of pigs, but up to the present case he had never even seen a case of swine fever. He bought the pigs, which became infected, from Tivetshall, and they went on all right for some three weeks before one sickened and died. Two more then died in a similar manner, but up to then he never dreamt that pig had

swine fever. The pigs had been fed on the sweepings of a linseed cake granary, and witness thought that they were attacked by something in the cake. Mr. Stansfield wanted to purchase all the pig, but witness would not sell him the barn yard of pigs until the police had seen them.

Cross-examined, witness said he knew swine fever was prevalent in certain parts of Norfolk. He took care about his own herds, but he never suspected that the disease had reached his animals.

Thomas Smith, steward in the employ of the appellant, also gave evidence.

Mr. William Stansfeld, farmer, of Manston Grange, near Leeds, said he had bought from time to time several hundreds of pigs from Mr. Learner for fattening purposes. He had never found at any time anything wrong with the pigs he had purchased. Witness examined the pigs in question, and did not notice anything wrong with them. He would have bought them if Mr. Learner would have sold them to him.

Cross-examined, witness said that Sergeant Till, of the Yorkshire Constabulary, interviewed him with reference to his dealings with Learner. He could not say what actually took place, nor did he remember telling Till that the pigs looked ill, that they were suffering from swine fever, or that Learner tried to sell to him. Learner never tried to sell to him the lot of sick pigs.

Mr. Thomas Edward Barcham, veterinary surgeon, of Paston, said that it was impossible to say definitely that a pig had had swine fever without a post-mortem. Cotton cake often killed pigs. Witness considered Mr. Learner was right in thinking that the deaths were due to overfeeding from cake.

Mr. T. Kidner, farmer, of Halvergate, said he had had much experience with pigs, and had come in contact with swine fever a great deal. The disease was one of the most difficult things to diagnose. If witness had been in Mr. Learner's position he would have done exactly as he did. The death of one or two pigs was a usual occurrence, and was recognised as such by dealers.

Mr. H. W. Goulder, farmer, of Aylsham, said he kept about one hundred pigs. He bought some of the cake sweepings from the same place Mr. Learner got his, and when he fed his pigs with it they became ill. He stopped the feeding within a week, and the pigs got better.

The appeal was dismissed with costs.—*Eastern Daily Press.*

Sir Edward Strachey, representative of the Board of Agriculture in the House of Commons, speaking at a meeting of the Somerset County Council at Taunton, warned the members of the Council and agriculturists generally that they must look forward to very stringent legislation in the future with reference to the sending of insanitary milk into the great centres of population. The Council would have a very serious and heavy obligation put upon it, and the only way in which it could meet this was by having a county medical of health to satisfy the authorities that everything necessary had been done to secure proper sanitary arrangements.

At last monthly meeting of the Ludlow Town Council the Sanitary Committee recommended that Mr. A. C. Smart, V.S., Ludlow, be appointed to make a veterinary inspection of the cows in the various dairies supplying milk in the borough, with a view to detecting cases of tuberculosis.—*M.T.J.*

The International Surgical Society will hold its Second Congress at Brussels in September, 1908, and is organising a special exhibition in connection with cancer, mainly with reference to the study and treatment of the disease.—*La Clin. Vet.*

In the French Parliament there are five veterinary surgeons, in addition to the heads of the three colleges, who sit in the Senate *ex-officio.—L'Echo Vét.*

Two veterinary surgeons have been appointed as Secretaries to the Department of Public Health.—*La Clin. Vet.*

Personal.

Collins—Hill.—On the 1st inst., at St. Mary's, Monken Hadley, Laurence Churton Collins, second son of Prof. Churton Collins, M.A., to Constance Eleanor, second daughter of Prof. Woodroffe Hill, F.R.C.V.S., of 22 Hereford Road, W., and of the Cottage, Hadley Green, Herts.

ARMY VETERINARY SERVICE.

Extract from *London Gazette*,

War Office, Jan. 3, 1907.

Imperial Yeomanry.

3rd County of London (Sharpshooters).—Vet.-Lieut. P. W. Dayus-Smith to be Vet.-Capt. (Nov. 4.)

Volunteer Corps.

2nd Lancashire.—A. Walker to be Vet.-Lieut.

January 7.

Army Veterinary Corps.

Quartermaster and Honorary Lieutenant Robert C Fenton is placed on temporary half-pay on account of ill-health. Dated 26th Dec., 1907.

Northern Mounted Rifles.

Regimental Orders by Lieu.-Col. H. Dales, Commanding the Northern Mounted Rifles, Pietersburg, 26th Nov., 1907.

Extract from Government Gazette, 15th Nov., 1907. Government Notice No. 1258 of 1907. Transvaal Volunteers:—

Vet.-Lieut. J. I. Edgar to be Vet.-Capt. to complete Establishment. Dated 22nd Oct., 1907.

Col. J. A. Nunn, Principal Veterinary Officer in India, has been invalided home. The duties of his office will be discharged by Col. R. Pringle.—*The Standard.*

CORRESPONDENCE

GASTRIC TORSION IN THE DOG.

Sir,

I have read with great interest the case reported by Mr. Billinghurst as one of great rarity, and probably the first recorded in this country. The condition described by him concurs with a few others reported by M. Cadéac and Prof. Kitt, the former stating that the condition is a rare one, he having encountered three cases in 1894. The latter reports two cases in his pathological anatomy, and has observed the same condition in the calf. Prof. Cadéac advises puncture, laparotomy or rotation. No doubt cases do occur oftener than is supposed but are not diagnosed as torsion of the stomach. It is with the object of drawing attention to this condition that I have penned these few notes.

Earl's Court, S.W. G. Yates, M.R.C.V.S.

Communications and Papers Received.—Messrs. James Chalmers, C. Cruft, G. Mayall, G. Yates, J. Forbes. *The Scotsman.*